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**TEST REPORT  
IEC 60335-2-80**

**Safety of household and similar electrical appliances  
Part 2 : Particular requirements for fans**

**Report Number** .....: 247910

**Date of issue** .....: 2014-01-10

**Total number of pages** .....: 101 pages and see page 3 for attachment list

**Applicant's name** .....: KENNEDE ELECTRONICS MFG CO., LTD.

**Address** .....: No.21, Jintong Road, Tangxia Town, Pengjiang District, Jiangmen City, Guangdong Province, China.

**Test specification:**

**Standard** .....: IEC 60335-2-80:2002 (Second edition) + A1:2004 +A2:2008 in conj. With IEC 60335-1:2010 (Fifth Edition)

**Test procedure** .....: CB Scheme

**Non-standard test method** .....: N/A

**Test Report Form No.** .....: IEC60335\_2\_80E

**Test Report Form(s) Originator** ....: DEKRA Certification B.V.

**Master TRF** .....: Dated 2012-09

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**This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.**

**Test item description** .....: Rechargeable Fan

**Trade Mark** .....: **KENNEDE®**

**Manufacturer** .....: KENNEDE ELECTRONICS MFG CO., LTD.  
No.21, Jintong Road, Tangxia Town, Pengjiang District, Jiangmen City, Guangdong Province, China.

**Model/Type reference** .....: KN-29XXX, see page 6 for model explanation

**Ratings** .....: 24W or 30W 220-240V~ 50/60Hz; Cl. II, T

IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict

Testing procedure and testing location:			
<input checked="" type="checkbox"/>	CB Testing Laboratory:	Nemko Hong Kong Ltd.	
Testing location/ address.....:		Unit 1-5, 15/F, CCT Telecom Building, No. 11 Wo Shing Street, Fotan, Shatin, N.T., Hong Kong	
<input type="checkbox"/>	Associated Laboratory:		
Testing location/ address.. ....:			
	Tested by (name + signature):	William Cheung	
	Approved by (+ signature).....:	Zoe Chan	
<input type="checkbox"/>	Testing procedure: TMP		
	Tested by (name + signature):		
	Witnessed by (+ signature):		
	Approved by (+ signature).....:		
Testing location/ address.. ....:			
<input type="checkbox"/>	Testing procedure: WMT		
	Tested by (name + signature):		
	Witnessed by (+ signature):		
	Approved by (+ signature).....:		
Testing location/ address.. ....:			
<input type="checkbox"/>	Testing procedure: SMT		
	Tested by (name + signature):		
	Approved by (+ signature).....:		
	Supervised by (+ signature) .....		
Testing location/ address.. ....:			
<input type="checkbox"/>	Testing procedure: RMT		
	Tested by (name + signature):		
	Approved by (+ signature).....:		
	Supervised by (+ signature) .....		
Testing location/ address.. ....:			



IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict

**List of Attachments (including a total number of pages in each attachment):**

ATTACHMENT: Photo(s), 30 pages

**Summary of testing:****Tests performed (name of test and test clause):**

Models KN-2905, KN-2712, KN-2903, KN-2926, KN-2918HR, KN-2912, KN-2916, KN-2914H, KN-2918H, KN-2914HR & KN-2926HR were selected as representative models for full testing. Others for construction checking (Cl. 22).

All tests were performed under most unfavourable conditions.

LED and lamp attachment considered by Nemko report 247910.

The tested samples are complying with the relevant product standard(s):

IEC 60335-2-80:2002 (Second edition) + A1:2004  
+A2:2008

IEC 60335-1:2010 (Fifth Edition)

**Testing location:**

Nemko Hong Kong Ltd.  
Unit 1-5, 15/F, CCT Telecom Building, No. 11 Wo Shing Street, Fotan, Shatin, N.T., Hong Kong

**Summary of compliance with National Differences**

N/A

## IEC 60335-2-80

Clause	Requirement - Test	Result - Remark	Verdict
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**Copy of marking plate**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Model: KN-2903  
220-240V~50/60Hz  
4W



Kennede Electronics MFG.Co.LTD.

Model: KN-2905  
220-240V~50/60Hz  
5W



Kennede Electronics MFG.Co.LTD.

Model: KN-2712  
220-240V~50/60Hz  
24W



Kennede Electronics MFG.Co.LTD.

Model: KN-2926  
220-240V~50/60Hz  
30W



Kennede Electronics MFG.Co.LTD.

Model: KN-2918H  
220-240V~50/60Hz  
30W



Kennede Electronics MFG.Co.LTD.

Model: KN-2918HR  
220-240V~50/60Hz  
30W



Kennede Electronics MFG.Co.LTD.

**Remark:**

- 1)The markings of other models are the same as KN-2918HR except for the model name and/or power rating.
- 2) The trademark was marked on the samples.



IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict
<b>Test item particulars</b> .....:			
<b>Classification of installation and use</b> .....: Portable appliance			
<b>Supply Connection</b> .....: Appliance inlet, detachable cord with plug and connector is delivered together with the appliance, and/or DC inlet			
.....:			
<b>Possible test case verdicts:</b>			
- <b>test case does not apply to the test object</b> .....: N/A			
- <b>test object does meet the requirement</b> .....: P (Pass)			
- <b>test object does not meet the requirement</b> .....: F (Fail)			
<b>Testing</b> .....			
<b>Date of receipt of test item</b> .....: 2013-11-08			
<b>Date (s) of performance of tests</b> .....: 2013-11-12 to 2013-12-26			
<b>General remarks:</b>  The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report.  Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.			
<b>Manufacturer's Declaration per sub-clause 6.2.5 of IEC60335-2-80:</b>  The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....:			
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable			
<b>When differences exist; they shall be identified in the General product information section.</b>			
<b>Name and address of factory (ies)</b> .....: KENNEDE ELECTRONICS MFG CO., LTD. No.21, Jintong Road, Tangxia Town, Pengjiang District, Jiangmen City, Guangdong Province, China.			

IEC 60335-2-80					
Clause	Requirement - Test	Result - Remark		Verdict	

**General product information:**

It is a rechargeable fan. The appliances are powered by batteries that are recharged in the appliance. This appliance is applicable in tropical climate.

Main model : KN-29XXX. The "XXX" can be 12, 14, 16, 24, 26, 14H, 16H, 18H or 26H.  
30W or 24W 220-240V~ 50/60Hz; Cl. II, T

Variant 1:

Model : KN-290Y. The "Y" can be 3 or 5.  
4W or 5W 220-240V~ 50/60Hz; Cl. II, T

Variant 2:

Model : KN-29ZZHR, The "ZZ" can be 14, 16, 18 or 26  
24W or 30W 220-240V~ 50/60Hz; Cl. II, T

Variant 3:

Model : KN-2712.  
24W 220-240V~ 50/60Hz; Cl. II, T

**Model explanation:**

Mode of appliance	Motor(type/rating,class)	Transformer (type/ rating/ class)	Circuit of appliance	Power	Type of control and fan
KN-29XXX					
KN-2912	KRS-550STP-35112-123D / SH-550STP-35112-123D DC 6V 1,2 / 1,83A Class130 (B)	EI48 220V-240V 50/60Hz Class130 (B), output 7,5V	The same as model KN-2912	24W	Electronic table fan
KN-2924 KN-2926	KRS-560STP-27110-127.5D DC 12V 1,3A Class130 (B)	EI57 220V-240V 50/60Hz Class130 (B), output 12,5V	The same as model KN-2924	30W	
KN-2926H			The same as model KN-2926H		
KN-2918H	KRS-775STP-31120-144.2FD DC 12V 1,7A Class130 (B)				Electronic pedestal fan
KN-2914H KN-2916H	KRS-560STP-33120-127.5D / SH-560STP-33120-127.5D DC 6V 1,75 / 1,58A Class130 (B)	EI57 220V-240V 50/60Hz Class130 (B), output 7,5V	The same as model KN-2914H	24W	
KN-2914 KN-2916			The same as model KN-2914		Electronic table fan
KN-29Y					
KN-2903	KN-2903M DC 4,2V 0,22A Class130 (B)	-	KN-2903 Circuit diagram	4W	Electronic mini fan



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Clause	Requirement - Test	Result - Remark		Verdict
KN-2905	KN-2905M DC 4,2V 0,34A Class130 (B)	-	KN-2905 Circuit diagram	5W
<hr/>				
Mode of appliance	Motor(type/rating,class)	Transformer (type/ rating/ class)	Circuit of appliance	Power Type of control and fan
KN-29ZZHR				
KN-2918HR	KRS-775STP-31120-144.2FD DC 12V 1,7A Class130 (B)	EI57 220V-240V 50/60Hz Class130 (B), output 12,5V	The same as model KN-2918HR	30W
KN-2926HR	KRS-560STP-27110-127.5D DC 12V 1,3A Class130 (B)			Electronic pedestal fan
KN-2914HR KN-2916HR	KRS-560STP-33120-127.5D / SH-560STP-33120-127.5D DC 6V 1,75 / 1,58A Class130 (B)	EI57 220V-240V 50/60Hz Class130 (B), output 7,5V	The same as model KN-2914HR	24W
KN-2712	KRS-555STP-3856-117D / SH-555STP-3856-117D DC 6V 1,3 / 1,83A Class130 (B)	EI48 220V-240V 50/60Hz Class130 (B), output 7,5V	The same as model KN-2712	24W
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<b>Marking label, user manual, packing text:</b> Instructions and marking shall be in a language acceptable for the country where the equipment is to be used.				
<b>Mains plug:</b> If the equipment shall be used with a special mains plug which is not listed in the component list (e.g. United Kingdom), samples of the modified product must be subject to a test according to the relevant clauses of the product standard.				
<b>Other product properties:</b> Depending on the country where the equipment is to be used, national deviations may be considered. Samples of the modified product may be tested again according to relevant clauses of the product standard, modified by national deviations.				

IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict
5	GENERAL CONDITIONS FOR THE TESTS		—
	Tests performed according to clause 5, e.g. nature of supply, sequence of testing, etc.		P
5.7	A	Fans to be used in tropical climates, the tests of clause 10,11 and 13 are carried out at 40 °C +/- 2 °C (IEC 60335-2-8)	P
	A	Fans marked with ambient operating temperature, the tests of clause 10, 11 and 13 are carried out at marked value +/- 2 °C (IEC 60335-2-80/A1)	N/A
6	CLASSIFICATION		—
6.1	Protection against electric shock: Class 0, 0I, I, II, III .....	Class II	P
6.2	Protection against harmful ingress of water		N/A
	A	At least IPX2 for Duct fans (IEC 60335-2-8)	N/A
6.101	Classification to climatic conditions : temperature climates, tropical climates (IEC 60335-2-8)		P
7	MARKING AND INSTRUCTIONS		—
7.1	Rated voltage or voltage range (V) .....	220-240V	P
	Symbol for nature of supply, or .....	~	P
	Rated frequency (Hz) .....	50/60Hz	P
	Rated power input (W), or .....	30W, 24W, 5W or 4W	P
	Rated current (A) .....		N/A
	Manufacturer's or responsible vendor's name, trademark or identification mark .....	Trademark: <b>KENNEDY</b> ®	P
	Model or type reference .....	KN-29XXX, KN-29Y, KN-29ZZHR, KN-2712	P
	Symbol IEC 60417-5172, for class II appliances		P
	IP number, other than IPX0.....		N/A
	Symbol IEC 60417-5180, for class III appliances, unless		N/A
	the appliance is operated by batteries only		N/A
	Symbol IEC 60417-5036, for the enclosure of electrically-operated water valves in external hose-sets for connection of an appliance to the water mains, if the working voltage exceeds extra-low voltage		N/A

IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict
A	For tropical climates marked with letter T (IEC 60335-2-8)		P
A	Fans intended for operation in location where the local temperature exceeds 40 °C shall be marked with the ambient operating temperature. (IEC 60335-2-80/A1)		N/A
7.2	Warning for stationary appliances for multiple supply		N/A
	Warning placed in vicinity of terminal cover		N/A
7.3	Range of rated values marked with the lower and upper limits separated by a hyphen	220-240V	P
	Different rated values marked with the values separated by an oblique stroke	50/60Hz	P
7.4	Appliances adjustable for different rated voltages, the voltage setting is clearly discernible		N/A
	Requirement met if frequent changes are not required and the rated voltage to which the appliance is to be adjusted is determined from a wiring diagram		N/A
7.5	Appliances with more than one rated voltage or one or more rated voltage ranges, marked with rated input or rated current for each rated voltage or range, unless		P
	the power input is related to the arithmetic mean value of the rated voltage range		P
	Relation between marking for upper and lower limits of rated power input or rated current and voltage is clear		N/A
7.6	Correct symbols used		P
	Symbol for nature of supply placed next to rated voltage		P
	Symbol for class II appliances placed unlikely to be confused with other marking		P
	Units of physical quantities and their symbols according to international standardized system		P
7.7	Connection diagram fixed to appliances to be connected to more than two supply conductors and appliances for multiple supply, unless		N/A
	correct mode of connection is obvious		N/A
7.8	Except for type Z attachment, terminals for connection to the supply mains indicated as follows:		—

IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict
	- marking of terminals exclusively for the neutral conductor (letter N)		N/A
	- marking of protective earthing terminals (symbol IEC 60417-5019)		N/A
	- marking not placed on removable parts		N/A
7.9	Marking or placing of switches which may cause a hazard		P
7.10	Indications of switches on stationary appliances and controls on all appliances by use of figures, letters or other visual means .....:.	Letters, symbols and Indicating light	P
	This applies also to switches which are part of a control		N/A
	If figures are used, the off position indicated by the figure 0		N/A
	The figure 0 indicates only OFF position, unless no confusion with the OFF position		N/A
7.11	Indication for direction of adjustment of controls		N/A
7.12	Instructions for safe use provided		P
	Details concerning precautions during user maintenance		N/A
	The instructions state that:		—
	- the appliance is not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction		P
	- children being supervised not to play with the appliance		P
	For a part of class III construction supplied from a detachable power supply unit, the instructions state that the appliance is only to be used with the unit provided		N/A
	Instructions for class III appliances state that it must only be supplied at SELV, unless		N/A
	it is a battery-operated appliance, the battery being charged outside the appliance		N/A
A	For the guards have to be removed purpose for cleaning should: (IEC 60335-2-80/A1)		—
	Ensure that the fan is switched off from the supply mains before removing the guard.		P
7.12.1	Sufficient details for installation supplied		N/A

IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict
	For an appliance intended to be permanently connected to the water mains and not connected by a hose-set, this is stated		N/A
A	The installation instructions include the substance of the following: (IEC 60335-2-8)	—	
	- the model or type reference of a luminaire		N/A
	- mounting location for partition fans		N/A
	- The installation height for fans intended to be mounted at high level		N/A
	- that precautions for duct and partition fans.		N/A
7.12.2	Stationary appliances not fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III, the instructions state that means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules		N/A
7.12.3	Insulation of the fixed wiring in contact with parts exceeding 50 K during clause 11; instructions state that the fixed wiring must be protected		N/A
7.12.4	Instructions for built-in appliances:	—	
	- dimensions of space		N/A
	- dimensions and position of supporting and fixing		N/A
	- minimum distances between parts and surrounding structure		N/A
	- minimum dimensions of ventilating openings and arrangement		N/A
	- connection to supply mains and interconnection of separate components		N/A
	- allow disconnection of the appliance after installation, by accessible plug or a switch in the fixed wiring, unless		N/A
	a switch complying with 24.3		N/A
7.12.5	Replacement cord instructions, type X attachment with a specially prepared cord		N/A
	Replacement cord instructions, type Y attachment	Appliance inlet used	N/A
	Replacement cord instructions, type Z attachment		N/A
7.12.6	Caution in the instructions for appliances incorporating a non-self-resetting thermal cut-out that is reset by disconnection of the supply mains, if this cut-out is required to comply with the standard		N/A



IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict
7.12.7	Instructions for fixed appliances stating how the appliance is to be fixed		N/A
7.12.8	Instructions for appliances connected to the water mains: - max. inlet water pressure (Pa) .....: .....; - min. inlet water pressure, if necessary (Pa).....: .....		— N/A N/A
	Instructions concerning new and old hose-sets for appliances connected to the water mains by detachable hose-sets		N/A
7.13	Instructions and other texts in an official language	English checked	P
7.14	Marking clearly legible and durable, rubbing test as specified		P
7.15	Markings on a main part		P
	Marking clearly discernible from the outside, if necessary after removal of a cover		P
	For portable appliances, cover can be removed or opened without a tool		N/A
	For stationary appliances, name, trademark or identification mark and model or type reference visible after installation		N/A
	For fixed appliances, name, trademark or identification mark and model or type reference visible after installation according to the instructions		N/A
	Indications for switches and controls placed on or near the components. Marking not on parts which can be positioned or repositioned in such a way that the marking is misleading		P
7.16	Marking of a possible replaceable thermal link or fuse link clearly visible with regard to replacing the link		N/A
8	PROTECTION AGAINST ACCESS TO LIVE PARTS		—
8.1	Adequate protection against accidental contact with live parts		P
8.1.1	Requirement applies for all positions, detachable parts removed		P
	Lamps behind a detachable cover not removed, if conditions met		N/A
	Insertion or removal of lamps, protection against contact with live parts of the lamp cap		N/A
	Use of test probe B of IEC 61032, with a force not exceeding 1 N: no contact with live parts		P



IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict
A	Lamps are not removed. However, during insertion or removal of lamps, no contact with live parts of the lamp cap. (IEC 60335-2-8)		N/A
8.1.2	Use of test probe 13 of IEC 61032, with a force not exceeding 1 N, through openings in class 0 appliances and class II appliances/constructions: no contact with live parts		P
	Test probe 13 also applied through openings in earthed metal enclosures having a non-conductive coating: no contact with live parts		N/A
8.1.3	For appliances other than class II, use of test probe 41 of IEC 61032, with a force not exceeding 1 N: no contact with live parts of visible glowing heating elements		N/A
8.1.4	Accessible part not considered live if:		—
	- safety extra-low a.c. voltage: peak value not exceeding 42.4 V	For models except KN-2903 & KN-2905	P
	- safety extra-low d.c. voltage: not exceeding 42.4 V		N/A
	- or separated from live parts by protective impedance		N/A
	If protective impedance: d.c. current not exceeding 2 mA, and		N/A
	a.c. peak value not exceeding 0.7 mA		N/A
	- for peak values over 42.4 V up to and including 450 V, capacitance not exceeding 0,1 µF		N/A
	- for peak values over 450 V up to and including 15 kV, discharge not exceeding 45 µC		N/A
	- for peak values over 15kV, the energy in the discharge not exceeding 350 mJ		N/A
8.1.5	Live parts protected at least by basic insulation before installation or assembly:		—
	- built-in appliances		N/A
	- fixed appliances		N/A
	- appliances delivered in separate units		N/A
8.2	Class II appliances and constructions constructed so that there is adequate protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only		P
	Only possible to touch parts separated from live parts by double or reinforced insulation		P

IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict
8.2	A Remove the detachable parts for user maintenance purpose, the basic insulation of internal wiring may be touched provide the equivalent insulating of cords complying with IEC 60227 or IEC 60245. (IEC 60335-2-80/A1)		N/A
9	STARTING OF MOTOR-OPERATED APPLIANCES		—
	Requirements and tests are specified in part 2 when necessary		N/A
10	POWER INPUT AND CURRENT		—
10.1	Power input at normal operating temperature, rated voltage and normal operation not deviating from rated power input by more than shown in table 1 ..:	(see appended table)	P
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated power input is related to the arithmetic mean value		P
A	Appliances are tested with shutters or similar devices in the open position.(IEC 60335-2-80)		N/A
10.2	Current at normal operating temperature, rated voltage and normal operation not deviating from rated current by more than shown in table 2.....:		N/A
	Test carried out at upper and lower limits of the ranges for appliances with one or more rated voltage ranges, unless		N/A
	the rated current is related to the arithmetic mean value of the range		N/A
A	Appliances are tested with shutters or similar devices in the open position. (IEC 60335-2-80)		N/A
11	HEATING		—
11.1	No excessive temperatures in normal use		P
11.2	The appliance is held, placed or fixed in position as described .....	Placed on floor	P
11.3	Temperature rises, other than of windings, determined by thermocouples		P
	Temperature rises of windings determined by resistance method, unless		P
	the windings are non-uniform or it is difficult to make the necessary connections		N/A
11.4	Heating appliances operated under normal operation at 1.15 times rated power input (W) .....		N/A

IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict
11.5	Motor-operated appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V) .....	1,06 x 240V = 254,4V	P
11.6	Combined appliances operated under normal operation at most unfavourable voltage between 0.94 and 1.06 times rated voltage (V) .....		N/A
11.7 R	Appliances are operated until steady conditions are established. (IEC 60335-2-80)		P
11.8	Temperature rises monitored continuously and not exceeding the values in table 3 .....	(see appended table)	P
	If the temperature rise of a motor winding exceeds the value of table 3, or		N/A
	if there is doubt with regard to classification of insulation,		N/A
	tests of Annex C are carried out		N/A
	Sealing compound does not flow out		P
	Protective devices do not operate, except		P
	components in protective electronic circuits tested for the number of cycles specified in 24.1.4		N/A
A	The temperature rise limits for appliances for tropical climates are reduced by 15 K. (IEC 60335-2-80)		P
A	The temperature rise limits for fans marked with an ambient operating temperature are reduced by the difference between the marked value and 25 °C. (IEC 60335-2-80/A1)		N/A
13	LEAKAGE CURRENT AND ELECTRIC STRENGTH AT OPERATING TEMPERATURE		—
13.1	Leakage current not excessive and electric strength adequate		P
	Heating appliances operated at 1.15 times the rated power input (W).....		N/A
	Motor-operated appliances and combined appliances supplied at 1.06 times the rated voltage (V).....	1,06 x 240V = 254,4V	P
	Protective impedance and radio interference filters disconnected before carrying out the tests		N/A
13.2	For class 0, class II and class III appliances, leakage current measured by means of the circuit described in figure 4 of IEC 60990		P
	For other appliances, a low impedance ammeter may be used		N/A



IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict
	Leakage current measurements .....: (see appended table)		P
13.3	The appliance is disconnected from the supply		P
	Electric strength tests according to table 4 .....: (see appended table)		P
	No breakdown during the tests		P
14	TRANSIENT OVERVOLTAGES		—
	Appliances withstand the transient over-voltages to which they may be subjected		N/A
	Clearances having a value less than specified in table 16 subjected to an impulse voltage test, the test voltage specified in table 6 .....:		N/A
	No flashover during the test, unless		N/A
	of functional insulation if the appliance complies with clause 19 with the clearance short-circuited		N/A
15	MOISTURE RESISTANCE		—
15.1	Enclosure provides the degree of moisture protection according to classification of the appliance		N/A
	Compliance checked as specified in 15.1.1, taking into account 15.1.2, followed by the electric strength test of 16.3		N/A
	No trace of water on insulation which can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.1.1	Appliances, other than IPX0, subjected to tests as specified in IEC 60529 .....:		N/A
	Water valves containing live parts in external hoses for connection of an appliance to the water mains tested as specified for IPX7 appliances		N/A
A	The outer part of fans to be installed in the external structure is subjected to subclause 14.2.4(a) of IEC 60529. The outer part of fans is not to be installed in the external structure is protected against the water. (IEC 60335-2-80/A1)		N/A
A	The fans supplied as rated voltage with shutters or similar devices being the open position. (IEC 60335-2-80/A1)		N/A
15.1.2	Hand-held appliance turned continuously through the most unfavourable positions during the test		N/A
	Built-in appliances installed according to the instructions		N/A



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Clause	Requirement - Test	Result - Remark	Verdict
	Appliances placed or used on the floor or table placed on a horizontal unperforated support		N/A
	Appliances normally fixed to a wall and appliances with pins for insertion into socket-outlets are mounted on a wooden board		N/A
	For IPX3 appliances, the base of wall mounted appliances is placed at the same level as the pivot axis of the oscillating tube		N/A
	For IPX4 appliances, the horizontal centre line of the appliance is aligned with the pivot axis of the oscillating tube, and		N/A
	for appliances normally used on the floor or table, the movement is limited to two times 90° for a period of 5 min, the support being placed at the level of the pivot axis of the oscillating tube		N/A
	Wall-mounted appliances, take into account the distance to the floor stated in the instructions		N/A
	Appliances normally fixed to a ceiling are mounted underneath a horizontal unperforated support, the pivot axis of the oscillating tube located at the level of the underside of the support, and		N/A
	for IPX4 appliances, the movement of the tube is limited to two times 90° from the vertical for a period of 5 min		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Detachable parts subjected to the relevant treatment with the main part		N/A
	However, if a part has to be removed for user maintenance and a tool is needed, this part is not removed		N/A
15.2	Spillage of liquid does not affect the electrical insulation		N/A
	Appliances with type X attachment fitted with a flexible cord as described		N/A
	Appliances incorporating an appliance inlet tested with or without an connector, whichever is most unfavourable		N/A
	Detachable parts are removed		N/A
	Overfilling test with additional amount of water, over a period of 1 min (l) .....		N/A
	The appliance withstands the electric strength test of 16.3		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	No trace of water on insulation that can result in a reduction of clearances or creepage distances below values specified in clause 29		N/A
15.3	Appliances proof against humid conditions	R.H. 93%; 30°C	P
	Checked by test Cab: Damp heat steady state in IEC 60068-2-78		P
	Detachable parts removed and subjected, if necessary, to the humidity test with the main part		N/A
	Humidity test for 48 h in a humidity cabinet		P
	Reassembly of those parts that may have been removed		N/A
	The appliance withstands the tests of clause 16		P
16	LEAKAGE CURRENT AND ELECTRIC STRENGTH		—
16.1	Leakage current not excessive and electric strength adequate		P
	Protective impedance disconnected from live parts before carrying out the tests		N/A
	Tests carried out at room temperature and not connected to the supply		P
16.2	Single-phase appliances: test voltage 1.06 times rated voltage (V).....:	1,06 x 240V = 254,4V	P
	Three-phase appliances: test voltage 1.06 times rated voltage divided by $\sqrt{3}$ (V) .....		N/A
	Leakage current measurements .....: (see appended table)	(see appended table)	P
	Limit values doubled if:		N/A
	- all controls have an off position in all poles, or		N/A
	- the appliance has no control other than a thermal cut-out, or		N/A
	- all thermostats, temperature limiters and energy regulators do not have an off position, or		N/A
	- the appliance has radio interference filters		N/A
	With the radio interference filters disconnected, the leakage current do not exceed limits specified .....		N/A
16.3	Electric strength tests according to table 7 .....	(see appended table)	P
	Test voltage applied between the supply cord and inlet bushing and cord guard and cord anchorage as specified .....		N/A
	No breakdown during the tests		P
17	OVERLOAD PROTECTION OF TRANSFORMERS AND ASSOCIATED CIRCUITS		—

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Clause	Requirement - Test	Result - Remark	Verdict
	No excessive temperatures in transformer or associated circuits in event of short-circuits likely to occur in normal use .....	(see appended table)	P
	Appliance supplied with 1.06 or 0.94 times rated voltage under the most unfavourable short-circuit or overload likely to occur in normal use (V) .....	1,06 × 240 V=254,4 V	P
	Basic insulation is not short-circuited		P
	Temperature rise of insulation of the conductors of safety extra-low voltage circuits not exceeding the relevant value specified in table 3 by more than 15 K		P
	Temperature of the winding not exceeding the value specified in table 8		P
	However, limits do not apply to fail-safe transformers complying with sub-clause 15.5 of IEC 61558-1		N/A
18	ENDURANCE		—
	Requirements and tests are specified in part 2 when necessary		N/A
19	ABNORMAL OPERATION		—
19.1	The risk of fire, mechanical damage or electric shock under abnormal or careless operation obviated		P
	Electronic circuits so designed and applied that a fault will not render the appliance unsafe .....		P
	Appliances incorporating heating elements subjected to the tests of 19.2 and 19.3, and		N/A
	if the appliance also has a control that limit the temperature during clause 11 it is subjected to the test of 19.4, and		N/A
	if applicable, to the test of 19.5		N/A
	Appliances incorporating PTC heating elements are also subjected to the test of 19.6		N/A
	Appliances incorporating motors subjected to the tests of 19.7 to 19.10, as applicable		P
	Appliances incorporating electronic circuits subjected to the tests of 19.11 and 19.12, as applicable		P
	Appliances incorporating contactors or relays subjected to the test of 19.14, being carried out before the tests of 19.11		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Appliances incorporating voltage selector switches subjected to the test of 19.15		N/A
	Unless otherwise specified, the tests are continued until a non-self-resetting thermal cut-out operates, or		P
	until steady conditions are established		P
	If a heating element or intentionally weak part becomes open-circuited, the relevant test is repeated on a second sample		N/A
A	Fans incorporating shutters or similar subjected to the test of cl. 19.101 (IEC 60335-2-80)		N/A
19.2	Test of appliances with heating elements with restricted heat dissipation; test voltage (V), power input of 0.85 times rated power input (W) .....		N/A
19.3	Test of 19.2 repeated; test voltage (V), power input of 1.24 times rated power input (W) .....		N/A
19.4	Test conditions as in clause 11, any control limiting the temperature during tests of clause 11 short-circuited		N/A
19.5	Test of 19.4 repeated on Class 0I and I appliances with tubular sheathed or embedded heating elements. No short-circuiting, but one end of the element connected to the sheath		N/A
	The test repeated with reversed polarity and the other end of the heating element connected to the sheath		N/A
	The test is not carried out on appliances intended to be permanently connected to fixed wiring and on appliances where an all-pole disconnection occurs during the test of 19.4		N/A
19.6	Appliances with PTC heating elements tested at rated voltage, establishing steady conditions		N/A
	The working voltage of the PTC heating element is increased by 5% and the appliance is operated until steady conditions are re-established. The voltage is then increased in similar steps until 1.5 times working voltage or until the PTC heating element ruptures (V) .....		N/A
19.7	Stalling test by locking the rotor if the locked rotor torque is smaller than the full load torque, or		N/A
	locking moving parts of other appliances	See annex I for models KN-2903 & KN-2905	P
	Locked rotor, capacitors open-circuited one at a time		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Test repeated with capacitors short-circuited one at a time, unless		N/A
	capacitor is of class P2 of IEC 60252-1		N/A
	Appliances with timer or programmer supplied with rated voltage for each of the tests, for a period equal to the maximum period allowed.....:	For remote models, tested with and without timer (max. period 0,5 hour) on	P
	Other appliances supplied with rated voltage for a period as specified .....	Until steady conditions	P
	Winding temperatures not exceeding values specified in table 8.....:	(see appended table)	P
A	Mounting of separate control (IEC 60335-2-80)		N/A
	Approximately 50 % of the area of each ventilating opening is blocked. (IEC 60335-2-80)		N/A
	Winding temperatures not exceeding values specified in table 8 (IEC 60335-2-80)		N/A
	The temperature rise of the board not exceed: (IEC 60335-2-80)	—	—
	– 50 K, for appliances with T marking;		N/A
	– 65 K, for other appliances.		N/A
19.8	Multi-phase motors operated at rated voltage with one phase disconnected		N/A
19.9	Not applicable. (IEC 60335-2-80)		N/A
19.10	Series motor operated at 1.3 times rated voltage for 1 min (V).....:		N/A
	During the test, parts not being ejected from the appliance		N/A
19.11	Electronic circuits, compliance checked by evaluation of the fault conditions specified in 19.11.2 for all circuits or parts of circuits, unless		P
	they comply with the conditions specified in 19.11.1		N/A
	Appliances incorporating an electronic circuit that relies upon a programmable component to function correctly, subjected to the test of 19.11.4.8, unless		N/A
	restarting does not result in a hazard		N/A
	Appliances having a device with an off position obtained by electronic disconnection, or a device placing the appliance in a stand-by mode, subjected to the tests of 19.11.4		P
	If the safety of the appliance under any of the fault conditions depends on the operation of a miniature fuse-link complying with IEC 60127, the test of 19.12 is carried out		P

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Clause	Requirement - Test	Result - Remark	Verdict
	During and after each test the following is checked:		—
	- the temperature of the windings do not exceed the values specified in table 8		P
	- the appliance complies with the conditions specified in 19.13		P
	- any current flowing through protective impedance not exceeding the limits specified in 8.1.4		N/A
	If a conductor of a printed board becomes open-circuited, the appliance is considered to have withstood the particular test, provided both of the following conditions are met:		—
	- the base material of the printed circuit board withstands the test of Annex E		N/A
	- any loosened conductor does not reduce clearance or creepage distances between live parts and accessible metal parts below the values specified in clause 29		N/A
19.11.1	Fault conditions a) to g) in 19.11.2 are not applied to circuits or parts of circuits meeting both of the following conditions:		—
	- the electronic circuit is a low-power circuit, that is, the maximum power at low-power points does not exceed 15 W according to the tests specified		N/A
	- the protection against electric shock, fire hazard, mechanical hazard or dangerous malfunction of other parts of the appliance does not rely on the correct functioning of the electronic circuit		N/A
19.11.2	Fault conditions applied one at a time, the appliance operating under conditions specified in clause 11, but supplied at rated voltage, duration of the tests as specified:		—
	a) short circuit of functional insulation if clearances or creepage distances are less than the values specified in clause 29		N/A
	b) open circuit at the terminals of any component		P
	c) short circuit of capacitors, unless they comply with IEC 60384-14		P
	d) short circuit of any two terminals of an electronic component, other than integrated circuits		P
	This fault condition is not applied between the two circuits of an optocoupler		N/A
	e) failure of triacs in the diode mode		P
	f) failure of microprocessors and integrated circuits		P
	g) failure of an electronic power switching device		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Each low power circuit is short-circuited by connecting the low-power point to the pole of the supply source from which the measurements were made		N/A
19.11.3	If the appliance incorporates a protective electronic circuit which operates to ensure compliance with clause 19, the relevant test is repeated with a single fault simulated, as indicated in a) to g) of 19.11.2		N/A
19.11.4	Appliances having a device with an off position obtained by electronic disconnection, or		P
	a device that can be placed in the stand-by mode,		P
	subjected to the tests of 19.11.4.1 to 19.11.4.7, the device being set in the off position or in the stand-by mode	No possible unsafe operation	P
	Appliances incorporating a protective electronic circuit subjected to the tests of 19.11.4.1 to 19.11.4.7, the tests being carried out after the protective electronic circuit has operated, except that		N/A
	appliances operated for 30 s or 5 min during the test of 19.7 are not subjected to the tests for electromagnetic phenomena.		N/A
	Surge protective devices disconnected, unless		N/A
	They incorporate spark gaps		N/A
19.11.4.1	The appliance is subjected to electrostatic discharges in accordance with IEC 61000-4-2, test level 4		P
19.11.4.2	The appliance is subjected to radiated fields in accordance with IEC 61000-4-3, test level 3		P
19.11.4.3	The appliance is subjected to fast transient bursts in accordance with IEC 61000-4-4, test level 3 or 4 as specified		P
19.11.4.4	The power supply terminals of the appliance subjected to voltage surges in accordance with IEC 61000-4-5, test level 3 or 4 as specified		P
	Earthed heating elements in class I appliances disconnected		N/A
19.11.4.5	The appliance is subjected to injected currents in accordance with IEC 61000-4-6, test level 3		P
19.11.4.6	Appliances having a rated current not exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-11		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Appliances having a rated current exceeding 16 A are subjected to the Class 3 voltage dips and interruptions in accordance with IEC 61000-4-34		N/A
19.11.4.7	The appliance is subjected to mains signals in accordance with IEC 61000-4-13, test level class 2		P
19.11.4.8	The appliance is supplied at rated voltage and operated under normal operation. After 60s the power supply is reduced to a level such that the appliance ceases to respond or parts controlled by the programmable component cease to operate		N/A
	The appliance continues to operate normally, or		N/A
	requires a manual operation to restart		N/A
19.12	If the safety of the appliance for any of the fault conditions specified in 19.11.2 depends on the operation of a miniature fuse-link complying with IEC 60127, the test is repeated, measuring the current flowing through the fuse-link; measured current (A); rated current of the fuse-link (A).....:	Measured current(A): >6A; Rated current of the fuse-link(A): 1A	P
19.13	During the tests the appliance does not emit flames, molten metal, poisonous or ignitable gas in hazardous amounts		P
	Temperature rises not exceeding the values shown in table 9 .....	(see appended table)	P
	Compliance with clause 8 not impaired		P
	If the appliance can still be operated it complies with 20.2		P
	Insulation, other than of class III appliances or class III constructions that do not contain live parts, withstands the electric strength test of 16.3, the test voltage as specified in table 4:		—
	- basic insulation (V).....:		N/A
	- supplementary insulation (V) .....		N/A
	- reinforced insulation (V) .....	3000V	P
	After operation or interruption of a control, clearances and creepage distances across the functional insulation withstand the electric strength test of 16.3, the test voltage being twice the working voltage		P
	The appliance does not undergo a dangerous malfunction, and		P
	no failure of protective electronic circuits, if the appliance is still operable		N/A
	Appliances tested with an electronic switch in the off position, or in the stand-by mode:		—

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Clause	Requirement - Test	Result - Remark	Verdict
	- do not become operational, or		N/A
	- if they become operational, do not result in a dangerous malfunction during or after the tests of 19.11.4		N/A
	If the appliance contains lids or doors that are controlled by one or more interlocks, one of the interlocks may be released provided that:		—
	- the lid or door does not move automatically to an open position when the interlock is released, and		N/A
	- the appliance does not start after the cycle in which the interlock was released		N/A
19.14	Appliances operated under the conditions of clause 11, any contactor or relay contact operating under the conditions of clause 11 being short-circuited		N/A
	For a relay or contactor with more than one contact, all contacts are short-circuited at the same time		N/A
	A relay or contactor operating only to ensure the appliance is energized for normal use is not short-circuited		N/A
	If more than one relay or contactor operates in clause 11, they are short-circuited in turn		N/A
19.15	For appliances with a mains voltage selector switch, the switch is set to the lowest rated voltage position and the highest value of rated voltage is applied		N/A
19.101	Fans incorporating shutters or similar that are operated automatically are supplied at rated voltage in the closed or open position, whichever is more unfavourable (IEC 60335-2-80)		N/A
20	STABILITY AND MECHANICAL HAZARDS		—
20.1	Appliances having adequate stability		P
	Tilting test through an angle of 10°, appliance placed on an inclined plane/horizontal support, not connected to the supply mains; appliance does not overturn		P
	Tilting test repeated on appliances with heating elements, angle of inclination increased to 15°		N/A
	Possible heating test in overturned position; temperature rise does not exceed values shown in table 9		N/A
A	Portable pedestal fans exceeding 1,7 m and exceeding 10 kg tested with a force of 40 N at 1,5 m. (IEC 60335-2-80)	Max height less than 1,7m and mass < 10kg	N/A
20.2	Moving parts adequately arranged or enclosed as to provide protection against personal injury		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Protective enclosures, guards and similar parts are non-detachable, and		P
	have adequate mechanical strength		P
	Enclosures that can be opened by overriding an interlock are considered to be detachable parts		N/A
	Self-resetting thermal cut-outs and overcurrent protective devices not causing a hazard by unexpected closure		N/A
	Not possible to touch dangerous moving parts with the test probe described		P
20.101	Fan blades, other than those for mounting at high level, shall be guarded, unless: (IEC 60335-2-80)	Guarded	P
	-they have a hardness less than D 60 Shore, or		N/A
	-they have a peripheral speed less than 15 m/s when the fan is supplied at rated voltage, or		N/A
	-the fan has a power output not exceeding 2 W when supplied at rated voltage.		N/A
21	MECHANICAL STRENGTH		—
21.1	Appliance has adequate mechanical strength and is constructed as to withstand rough handling		P
	Checked by applying 3 blows to every point of the enclosure likely to be weak, in accordance with test Ehb of IEC 60068-2-75, spring hammer test, with an impact energy of 0,5 J		P
	The appliance shows no damage impairing compliance with this standard, and		P
	compliance with 8.1, 15.1 and clause 29 not impaired		P
	If doubt, supplementary or reinforced insulation subjected to the electric strength test of 16.3		N/A
	If necessary, repetition of groups of three blows on a new sample		N/A
21.2	Accessible parts of solid insulation having strength to prevent penetration by sharp implements		P
	Test not applicable if the thickness of supplementary insulation is at least 1 mm and reinforced insulation at least 2 mm	Enclosure thickness: 2,1mm	P
	The insulation is tested as specified, and does withstand the electric strength test of 16.3		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
21.101	Fan guards are subjected to a push and pull force of 20 N. Dangerous moving parts are not accessible (IEC 60335-2-80)		P
	The test probe is applied with a force not exceeding 5N. (IEC 60335-2-80/A2)		P
21.102	Ceiling fans have adequate strength. Load four times mass (.....) (IEC 60335-2-80)		N/A
22	CONSTRUCTION		—
22.1	Appliance marked with the first numeral of the IP system, relevant requirements of IEC 60529 are fulfilled		N/A
A	NOTE 101 The enclosure defined in IEC 60529 does not include guards for fan blades. (IEC 60335-2-80)		N/A
22.2	Stationary appliance: means to ensure all-pole disconnection from the supply being provided:		—
	- a supply cord fitted with a plug, or		N/A
	- a switch complying with 24.3, or		N/A
	- a statement in the instruction sheet that a disconnection incorporated in the fixed wiring is to be provided, or		N/A
	- an appliance inlet		N/A
	Singe-pole switches and single-pole protective devices for the disconnection of heating elements in single-phase, permanently connected class 01 and class I appliances, connected to the phase conductor		N/A
22.3	Appliance provided with pins: no undue strain on socket-outlets		N/A
	Applied torque not exceeding 0.25 Nm		N/A
	Pull force of 50N to each pin after the appliance has being placed in the heating cabinet; when cooled to room temperature the pins are not displaced by more than 1mm		N/A
	Each pin subjected to a torque of 0.4Nm; the pins are not rotating, unless		N/A
	rotating does not impair compliance with this standard		N/A
22.4	Appliance for heating liquids and appliance causing undue vibration not provided with pins for insertion into socket-outlets		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
22.5	No risk of electric shock when touching the pins of the plug, for appliances having a capacitor with rated capacitance exceeding 0,1µF, the appliance being disconnected from the supply at the instant of voltage peak		P
	Voltage not exceeding 34 V (V) .....: 16V		P
22.6	Electrical insulation not affected by condensing water or leaking liquid		N/A
	Electrical insulation of Class II appliances not affected if a hose ruptures or seal leaks		N/A
	In case of doubt, test as described		N/A
22.7	Adequate safeguards against the risk of excessive pressure in appliances containing liquid or gases or having steam-producing devices		N/A
22.8	Electrical connections not subject to pulling during cleaning of compartments to which access can be gained without the aid of a tool, and that are likely to be cleaned in normal use		P
22.9	Insulation, internal wiring, windings, commutators and slip rings not exposed to oil, grease or similar substances, unless		P
	the substance has adequate insulating properties		N/A
22.10	Not possible to reset voltage-maintained non-self-resetting thermal cut-outs by the operation of an automatic switching device incorporated within the appliance, if:		N/A
	- a non-self-resetting thermal cut-out is required by the standard, and		N/A
	- a voltage maintained non-self-resetting thermal cut-out is used to meet it		N/A
	Non-self-resetting thermal motor protectors have a trip-free action, unless		N/A
	they are voltage maintained		N/A
	Reset buttons of non-self-resetting controls so located or protected that accidental resetting is unlikely		N/A
22.11	Reliable fixing of non-detachable parts that provide the necessary degree of protection against electric shock, moisture or contact with moving parts		P
	Obvious locked position of snap-in devices used for fixing such parts		P

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Clause	Requirement - Test	Result - Remark	Verdict
	No deterioration of the fixing properties of snap-in devices used in parts that are likely to be removed during installation or servicing		P
M	The 50 N force is not applied to clips used to fasten fan guards. (IEC 60335-2-80)	No clips used	N/A
	Instead, a force of 15 N is applied in any direction to the clips in an attempt to release them. (IEC 60335-2-80)		N/A
	Tests as described	Enclosure: push and pull 50N; Control panel: push and pull 50N	P
22.12	Handles, knobs etc. fixed in a reliable manner		P
	Fixing in wrong position of handles, knobs etc. indicating position of switches or similar components not possible		P
	Axial force 15 N applied to parts, the shape being so that an axial pull is unlikely to be applied		N/A
	Axial force 30 N applied to parts, the shape being so that an axial pull is likely to be applied	Control panel: push and pull 30N	P
22.13	Unlikely that handles, when gripped as in normal use, make the operator's hand touch parts having a temperature rise exceeding the value specified for handles which are held for short periods only		N/A
22.14	No ragged or sharp edges creating a hazard for the user in normal use, or during user maintenance		P
	No exposed pointed ends of self-tapping screws or other fasteners, likely to be touched by the user in normal use or during user maintenance		P
22.15	Storage hooks and the like for flexible cords smooth and well rounded		N/A
22.16	Automatic cord reels cause no undue abrasion or damage to the sheath of the flexible cord, no breakage of conductors strands and no undue wear of contacts		N/A
	Cord reel tested with 6000 operations, as specified		N/A
	Electric strength test of 16.3, voltage of 1000 V applied		N/A
22.17	Spacers not removable from the outside by hand or by means of a screwdriver or a spanner		N/A
22.18	Current-carrying parts and other metal parts resistant to corrosion		P
22.19	Driving belts not relied upon to provide the required level of insulation, unless		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	constructed to prevent inappropriate replacement		N/A
22.20	Direct contact between live parts and thermal insulation effectively prevented, unless		N/A
	material used is non-corrosive, non-hygroscopic and non-combustible		N/A
22.21	Wood, cotton, silk, ordinary paper and fibrous or hygroscopic material not used as insulation, unless		P
	impregnated		N/A
	This requirement does not apply to magnesium oxide and mineral ceramic fibres used for the electrical insulation of heating elements		N/A
22.22	Appliances not containing asbestos		P
22.23	Oils containing polychlorinated biphenyl (PCB) not used		N/A
22.24	Bare heating elements, except in class III appliances or class III constructions that do not contain live parts, adequately supported		N/A
	In case of rupture, the heating conductor is unlikely to come in contact with accessible metal parts		N/A
22.25	Sagging heating conductors, except in class III appliances or class III constructions that do not contain live parts, cannot come into contact with accessible metal parts		N/A
22.26	For class III constructions the insulation between parts operating at safety extra-low voltage and other live parts complies with the requirements for double or reinforced insulation		P
22.27	Parts connected by protective impedance separated by double or reinforced insulation		N/A
22.28	Metal parts of Class II appliances conductively connected to gas pipes or in contact with water, separated from live parts by double or reinforced insulation		N/A
22.29	Class II appliances permanently connected to fixed wiring so constructed that the required degree of access to live parts is maintained after installation		N/A
22.30	Parts serving as supplementary or reinforced insulation fixed so that they cannot be removed without being seriously damaged, or		P
	so constructed that they cannot be replaced in an incorrect position, and so that if they are omitted, the appliance is rendered inoperable or manifestly incomplete		P

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Clause	Requirement - Test	Result - Remark	Verdict
22.31	Neither clearances nor creepage distances over supplementary and reinforced insulation reduced below values specified in clause 29 as a result of wear		P
	Neither clearances nor creepage distances between live parts and accessible parts reduced below values for supplementary insulation if wires, screws etc. become loose		P
22.32	Supplementary and reinforced insulation constructed or protected against pollution so that clearances or creepage distances are not reduced below the values in clause 29		P
	Supplementary insulation of natural or synthetic rubber resistant to ageing, or arranged and dimensioned so that creepage distances are not reduced below values specified in 29.2		N/A
	Ceramic material not tightly sintered, similar materials or beads alone not used as supplementary or reinforced insulation		N/A
	Insulating material in which heating conductors are embedded is considered to be basic insulation, not reinforced insulation		N/A
	Oxygen bomb test at 70 °C for 96 h and 16 h at room temperature		N/A
22.33	Conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthing accessible metal parts are not in direct contact with live parts		N/A
	Electrodes not used for heating liquids		N/A
	For class II constructions, conductive liquids that are or may become accessible in normal use and conductive liquids that are in contact with unearthing accessible metal parts, not in direct contact with basic or reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	For class II constructions, conductive liquids which are in contact with live parts, not in direct contact with reinforced insulation, unless		N/A
	the reinforced insulation consists of at least 3 layers		N/A
	An air layer not used as basic or supplementary insulation in a double insulation system if likely to be bridged by leaking liquid		N/A
22.34	Shafts of operating knobs, handles, levers etc. not live, unless		P

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Clause	Requirement - Test	Result - Remark	Verdict
	the shaft is not accessible when the part is removed		N/A
22.35	For other than class III constructions, handles, levers and knobs, held or actuated in normal use, not becoming live in the event of a failure of basic insulation		P
	Such parts being of metal, and their shafts or fixings are likely to become live in the event of a failure of basic insulation, are either adequately covered by insulation material or their accessible parts are separated from their shafts or fixings by supplementary insulation		N/A
	This requirement does not apply to handles, levers and knobs on stationary appliances, other than those of electrical components, provided they are reliably connected to an earthing terminal or earthing contact, or separated from live parts by earthed metal		N/A
	Insulating material covering metal handles, levers and knobs withstand the electric strength test of 16.3 for supplementary insulation		N/A
22.36	For appliances other than class III, handles continuously held in the hand in normal use so constructed that when gripped as in normal use, the operators hand is not likely to touch metal parts, unless		N/A
	they are separated from live parts by double or reinforced insulation		N/A
22.37	Capacitors in Class II appliances not connected to accessible metal parts and their casings, if of metal, separated from accessible metal parts by supplementary insulation, unless		N/A
	the capacitors comply with 22.42		N/A
22.38	Capacitors not connected between the contacts of a thermal cut-out		P
22.39	Lamp holders used only for the connection of lamps		N/A
22.40	Motor-operated appliances and combined appliances intended to be moved while in operation, or having accessible moving parts, fitted with a switch to control the motor. The actuating member of the switch being easily visible and accessible	Not intended to be moved while in operation, nor having accessible moving parts	N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	If the appliance cannot operate continuously, automatically or remotely without giving rise to a hazard, appliances for remote operation being fitted with a switch for stopping the operation. The actuating member of the switch being easily visible and accessible	Without hazard	P
22.41	No components, other than lamps, containing mercury		P
22.42	Protective impedance consisting of at least two separate components		N/A
	Values specified in 8.1.4 not exceeded if any one of the components are short-circuited or open-circuited		N/A
	Resistors checked by the test of 14.1 a) in IEC 60065		N/A
	Capacitors checked by the tests for class Y capacitors in IEC 60384-14		N/A
22.43	Appliances adjustable for different voltages, accidental changing of the setting of the voltage unlikely to occur		N/A
22.44	Appliances not having an enclosure that is shaped or decorated like a toy		P
22.45	When air is used as reinforced insulation, clearances not reduced below the values specified in 29.1.3 due to deformation as a result of an external force applied to the enclosure		P
22.46	For programmable protective electronic circuits used to ensure compliance with the standard, the software contains measures to control the fault/error conditions in table R.1		N/A
	Software that contains measures to control the fault/error conditions specified in table R.2 is to be specified in parts 2 for particular constructions or to address specific hazards		N/A
	These requirements are not applicable to software used for functional purpose or compliance with clause 11		N/A
22.47	Appliances connected to the water mains withstand the water pressure expected in normal use		N/A
	No leakage from any part, including any inlet water hose		N/A
22.48	Appliances connected to the water mains constructed to prevent backsiphonage of non-potable water		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
22.49	For remote operation, the duration of operation is to be set before the appliance can be started, unless		P
	the appliance switches off automatically or can operate continuously without hazard		P
22.50	Controls incorporated in the appliance take priority over controls actuated by remote operation		P
22.51	There is a control on the appliance manually adjusted to the setting for remote operation before the appliance can be operated in this mode		N/A
	There is a visual indication showing that the appliance is adjusted for remote operation		N/A
	These requirements not necessary on appliances that can operate as follows, without giving rise to a hazard:		—
	- continuously, or		P
	- automatically, or		N/A
	- remotely		P
22.52	Socket-outlets on appliances accessible to the user in accordance with the socket-outlet system used in the country in which the appliance is sold		N/A
22.101	Appliances having provision for attaching a luminaire incorporate appropriate terminals and internal wiring. (IEC 60335-2-80)		N/A
23	INTERNAL WIRING		—
23.1	Wireways smooth and free from sharp edges		P
	Wires protected against contact with burrs, cooling fins etc.		P
	Wire holes in metal well-rounded or provided with bushings		N/A
	Wiring effectively prevented from coming into contact with moving parts		P
23.2	Beads etc. on live wires cannot change their position, and are not resting on sharp edges		N/A
	Beads inside flexible metal conduits contained within an insulating sleeve		N/A
23.3	Electrical connections and internal conductors movable relatively to each other not exposed to undue stress		P
	Flexible metallic tubes not causing damage to insulation of conductors		N/A
	Open-coil springs not used		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Adequate insulating lining provided inside a coiled spring, the turns of which touch one another		N/A
M	No damage after 100 000 flexings for conductors flexed during normal use and at rated voltage, or (IEC 60335-2-80)		P
	100 flexings for conductors flexed during user maintenance		N/A
	Electric strength test of 16.3, 1000 V between live parts and accessible metal parts		P
	Not more than 10% of the strands of any conductor broken, and		P
	not more than 30% for wiring supplying circuits that consume no more than 15W		P
23.4	Bare internal wiring sufficiently rigid and fixed		N/A
23.5	The insulation of internal wiring subjected to the supply mains voltage withstanding the electrical stress likely to occur in normal use		P
	Basic insulation electrically equivalent to the basic insulation of cords complying with IEC 60227 or IEC 60245, or		N/A
	no breakdown when a voltage of 2000 V is applied for 15 min between the conductor and metal foil wrapped around the insulation		P
23.6	Sleeving used as supplementary insulation on internal wiring retained in position by clamping at both ends, or		N/A
	be such that it can only be removed by breaking or cutting		P
23.7	The colour combination green/yellow only used for earthing conductors		N/A
23.8	Aluminium wires not used for internal wiring		P
23.9	Stranded conductors not consolidated by soldering where they are subjected to contact pressure, unless		P
	the contact pressure is provided by spring terminals		N/A
23.10	The insulation and sheath of internal wiring, incorporated in external hoses for the connection of an appliance to the water mains, at least equivalent to that of light polyvinyl chloride sheathed flexible cord (60227 IEC 52)		N/A
24	COMPONENTS		—

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Clause	Requirement - Test	Result - Remark	Verdict
24.1	Components comply with safety requirements in relevant IEC standards		P
	List of components .....: (see appended table)		P
	If components have not been tested and found to comply with relevant IEC standard for the number of cycles specified, they are tested in accordance with 24.1.1 to 24.1.9		P
	For components mentioned in 24.1.1 to 24.1.9 no additional tests specified in the relevant component standard are necessary other than those specified in 24.1.1 to 24.1.9		P
	Components not tested and found to comply with relevant IEC standard and components not marked or not used in accordance with its marking, tested under the conditions occurring in the appliance		P
	Lampholders and starterholders that have not being tested and found to comply with the relevant IEC standard, tested as a part of the appliance and additionally according to the gauging and interchangeability requirements of the relevant IEC standard		N/A
	No additional tests specified for nationally standardized plugs such as those detailed in IEC/TR 60083 or connectors complying with the standard sheets of IEC 60320-1 and IEC 60309		P
24.1.1	Capacitors likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing, complying with IEC 60384-14		N/A
	If the capacitors have to be tested, they are tested according to Annex F		N/A
24.1.2	Safety isolating transformers complying with IEC 61558-2-6		N/A
	If they have to be tested, they are tested according to Annex G		P
24.1.3	Switches complying with IEC 61058-1, the number of cycles of operation being at least 10 000		N/A
	If they have to be tested, they are tested according to Annex H	SS22F25G7, S22F25G9	P
	If the switch operates a relay or contactor, the complete switching system is subjected to the test		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	If the switch only operates a motor starting relay complying with IEC 60730-2-10 with the number of cycles of at least 10 000 as specified, the complete switching system need not be tested		N/A
24.1.4	Automatic controls complying with IEC 60730-1 with the relevant part 2. The number of cycles of operation being at least:		—
	- thermostats: 10 000		N/A
	- temperature limiters: 1 000		N/A
	- self-resetting thermal cut-outs: 300		N/A
	- voltage maintained non-self-resetting thermal cut-outs: 1 000		N/A
	- other non-self-resetting thermal cut-outs: 30		N/A
	- timers: 3 000		N/A
	- energy regulators: 10 000		N/A
	The number of cycles for controls operating during clause 11 need not be declared, if the appliance meets the requirements of this standard when they are short-circuited		N/A
	Thermal motor protectors are tested in combination with their motor under the conditions specified in Annex D		N/A
	For water valves containing live parts and that are incorporated in external hoses for connection of an appliance to the water mains, the degree of protection declared for subclause 6.5.2 of IEC 60730-2-8 is IPX7		N/A
24.1.5	Appliance couplers complying with IEC 60320-1		N/A
	However, for appliances classified higher than IPX0, the appliance couplers complying with IEC 60320-2-3		N/A
	Interconnection couplers complying with IEC 60320-2-2		N/A
24.1.6	Small lamp holders similar to E10 lampholders complying with IEC 60238, the requirements for E10 lampholders being applicable		N/A
24.1.7	For remote operation of the appliance via a telecommunication network, the relevant standard for the telecommunication interface circuitry in the appliance is IEC 62151		N/A
24.1.8	The relevant standard for thermal links is IEC 60691		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Thermal links not complying with IEC 60691 are considered to be an intentionally weak part for the purposes of Clause 19		N/A
24.1.9	Contactors and relays, other than motor starting relays, tested as part of the appliance		N/A
	They are also tested in accordance with Clause 17 of IEC 60730-1, the number of cycles of operations in 24.1.4 selected according to the contactor or relay function in the appliance.....:		N/A
24.2	Appliances not fitted with:  - switches or automatic controls in flexible cords		— P
	- devices causing the protective device in the fixed wiring to operate in the event of a fault in the appliance		P
	- thermal cut-outs that can be reset by soldering, unless  the solder has a melting point of at least 230 °C		P N/A
A	Switches or automatic controls in flexible cords are allowed for appliances not exceeding 25 W. (IEC 60335-2-80)	No switches or automatic controls in flexible cords	N/A
24.3	Switches intended for all-pole disconnection of stationary appliances are directly connected to the supply terminals and have a contact separation in all poles, providing full disconnection under overvoltage category III conditions		N/A
24.4	Plugs and socket-outlets for extra-low voltage circuits and heating elements, not interchangeable with plugs and socket-outlets listed in IEC/TR 60083 or IEC 60906-1 or with connectors and appliance inlets complying with the standard sheets of IEC 60320-1		N/A
24.5	Capacitors in auxiliary windings of motors marked with their rated voltage and capacitance, and used accordingly		N/A
	Voltage across capacitors in series with a motor winding does not exceed 1,1 times rated voltage, when the appliance is supplied at 1,1 times rated voltage under minimum load		N/A
24.6	Working voltage of motors connected to the supply mains and having basic insulation that is inadequate for the rated voltage of the appliance, not exceeding 42 V	For models KN-2903 & KN-2905	P
	In addition, the motors comply with the requirements of Annex I		P

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Clause	Requirement - Test	Result - Remark	Verdict
24.7	Detachable hose-sets for connection of appliances to the water mains comply with IEC 61770		N/A
	They are supplied with the appliance		N/A
	Appliances intended to be permanently connected to the water mains not connected by a detachable hose-set		N/A
24.8	Motor running capacitors in appliances for which 30.2.3 is applicable and that are permanently connected in series with a motor winding, not causing a hazard in event of a failure		N/A
	One or more of the following conditions are to be met:		—
	- the capacitors are of class P2 according to IEC 60252-1		N/A
	- the capacitors are housed within a metallic or ceramic enclosure		N/A
	- the distance of separation of the outer surface to adjacent non-metallic parts exceeds 50 mm		N/A
	- adjacent non-metallic parts within 50 mm withstand the needle-flame test of Annex E		N/A
	- adjacent non-metallic parts within 50 mm classified as at least V-1 according to IEC 60695-11-10		N/A
24.101	Thermal cut-outs in duct fans in order to comply with cl. 19 are not self-resetting (IEC 60335-2-80)		N/A
25	SUPPLY CONNECTION AND EXTERNAL FLEXIBLE CORDS		—
25.1	Appliance not intended for permanent connection to fixed wiring, means for connection to the supply:		—
	- supply cord fitted with a plug,		N/A
	- an appliance inlet having at least the same degree of protection against moisture as required for the appliance, or	Detachable cord with plug and connector is delivered together with the appliance	P
	- pins for insertion into socket-outlets		N/A
25.2	Appliance not provided with more than one means of connection to the supply mains		P
	Stationary appliance for multiple supply may be provided with more than one means of connection, provided electric strength test of 1250 V for 1 min between each means of connection causes no breakdown		N/A
25.3	Appliance intended to be permanently connected to fixed wiring provided with one of the following means for connection to the supply mains:		—

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Clause	Requirement - Test	Result - Remark	Verdict
	- a set of terminals allowing the connection of a flexible cord		N/A
	- a fitted supply cord		N/A
	- a set of supply leads accommodated in a suitable compartment		N/A
	- a set of terminals for the connection of cables of fixed wiring, cross-sectional areas specified in 26.6, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	- a set of terminals and cable entries, conduit entries, knock-outs or glands, allowing connection of appropriate types of cable or conduit, and the appliance allows the connection of the supply conductors after the appliance has been fixed to its support		N/A
	For a fixed appliance constructed so that parts can be removed to facilitate easy installation, this requirement is met if it is possible to connect the fixed wiring without difficulty after a part of the appliance has been fixed to its support		N/A
25.4	Cable and conduit entries, rated current of appliance not exceeding 16 A, dimension according to table 10 (mm) .....		N/A
	Introduction of conduit or cable does not reduce clearances or creepage distances below values specified in clause 29		N/A
25.5	Method for assembling the supply cord to the appliance:		—
	- type X attachment		N/A
	- type Y attachment		N/A
	- type Z attachment, if allowed in relevant part 2		N/A
	Type X attachment, other than those with a specially prepared cord, not used for flat twin tinsel cords		N/A
	For multi-phase appliances supplied with a supply cord and that are intended to be permanently connected to fixed wiring, the supply cord is assembled to the appliance by type Y attachment		N/A
A	- type Z attachment is allowed for portable fans (IEC 60335-2-80)		N/A
25.6	Plugs fitted with only one flexible cord		P
25.7	Supply cords, other than for class III appliances, being one of the following types:		—

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Clause	Requirement - Test	Result - Remark	Verdict
	- rubber sheathed (at least 60245 IEC 53)		N/A
	- polychloroprene sheathed (at least 60245 IEC 57)		N/A
	- cross-linked polyvinyl chloride sheathed (at least 60245 IEC 88)		N/A
	- polyvinyl chloride sheathed. Not used if they are likely to touch metal parts having a temperature rise exceeding 75 K during the test of clause 11		N/A
	<ul style="list-style-type: none"> <li>• light polyvinyl chloride sheathed cord (60227 IEC 52), for appliances not exceeding 3 kg</li> </ul>	H03VVH2-F	P
	<ul style="list-style-type: none"> <li>• ordinary polyvinyl chloride sheathed cord (60227 IEC 53), for other appliances</li> </ul>	H05VVH2-F	P
	- heat resistant polyvinyl chloride sheathed. Not used for type X attachment other than specially prepared cords		—
	<ul style="list-style-type: none"> <li>• heat-resistant light polyvinyl chloride sheathed cord (60227 IEC 56), for appliances not exceeding 3 kg</li> </ul>		N/A
	<ul style="list-style-type: none"> <li>• heat-resistant polyvinyl chloride sheathed cord (60227 IEC 57), for other appliances</li> </ul>		N/A
	Supply cords for class III appliances adequately insulated		N/A
	Test with 500 V for 2 min for supply cords of class III appliances that contain live parts		N/A
25.8	Nominal cross-sectional area of supply cords not less than table 11; rated current (A); cross-sectional area (mm <sup>2</sup> ).....:	0,16A (maximum rated); 0,75mm <sup>2</sup>	P
25.9	Supply cords not in contact with sharp points or edges		N/A
25.10	Supply cord of class I appliances have a green/yellow core for earthing		N/A
25.11	Conductors of supply cords not consolidated by soldering where they are subject to contact pressure, unless		N/A
	the contact pressure is provided by spring terminals		N/A
25.12	Insulation of the supply cord not damaged when moulding the cord to part of the enclosure		N/A
25.13	Inlet openings so constructed as to prevent damage to the supply cord		N/A
	If the enclosure at the inlet opening is not of insulating material, a non-detachable lining or bushing complying with 29.3 for supplementary insulation provided		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	If unsheathed supply cord, a similar additional bushing or lining is required, unless the appliance is		N/A
	class 0, or		N/A
	a class III appliance not containing live parts		N/A
25.14	Supply cords moved while in operation adequately protected against excessive flexing		N/A
	Flexing test, as described:		—
	- applied force (N).....: .....		N/A
	- number of flexings.....: .....		N/A
	The test does not result in:		—
	- short-circuit between the conductors, such that the current exceeds a value of twice the rated current		N/A
	- breakage of more than 10% of the strands of any conductor		N/A
	- separation of the conductor from its terminal		N/A
	- loosening of any cord guard		N/A
	- damage to the cord or the cord guard		N/A
	- broken strands piercing the insulation and becoming accessible		N/A
25.15	For appliances with supply cord and appliances to be permanently connected to fixed wiring by a flexible cord, conductors of the supply cord relieved from strain, twisting and abrasion by use of cord anchorage		N/A
	The cord cannot be pushed into the appliance to such an extent that the cord or internal parts of the appliance can be damaged		N/A
	Pull and torque test of supply cord, values shown in table 12: mass (kg); pull (N); torque (not on automatic cord reel) (Nm).....: .....		N/A
	Cord not damaged and max. 2 mm displacement of the cord		N/A
25.16	Cord anchorages for type X attachments constructed and located so that:		—
	- replacement of the cord is easily possible		N/A
	- it is clear how the relief from strain and the prevention of twisting are obtained		N/A
	- they are suitable for different types of supply cord		N/A
	- cord cannot touch the clamping screws of cord anchorage if these screws are accessible, unless		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	they are separated from accessible metal parts by supplementary insulation		N/A
	- the cord is not clamped by a metal screw which bears directly on the cord		N/A
	- at least one part of the cord anchorage securely fixed to the appliance, unless		N/A
	it is part of a specially prepared cord		N/A
	- screws which have to be operated when replacing the cord do not fix any other component, unless		N/A
	the appliance becomes inoperative or incomplete or the parts cannot be removed without a tool		N/A
	- if labyrinths can be bypassed the test of 25.15 is nevertheless withstood		N/A
	- for class 0, 0I and I appliances they are of insulating material or are provided with an insulating lining, unless		N/A
	failure of the insulation of the cord does not make accessible metal parts live		N/A
	- for class II appliances they are of insulating material, or		N/A
	if of metal, they are insulated from accessible metal parts by supplementary insulation		N/A
	After the test of 25.15, under the conditions specified, the conductors have not moved by more than 1 mm in the terminals		N/A
25.17	Adequate cord anchorages for type Y and Z attachment, test with the cord supplied with the appliance		N/A
25.18	Cord anchorages only accessible with the aid of a tool, or		N/A
	Constructed so that the cord can only be fitted with the aid of a tool		N/A
25.19	Type X attachment, glands not used as cord anchorage in portable appliances		N/A
	Tying the cord into a knot or tying the cord with string not used		N/A
25.20	The insulated conductors of the supply cord for type Y and Z attachment additionally insulated from accessible metal parts		N/A
25.21	Space for supply cord for type X attachment or for connection of fixed wiring constructed:		—

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Clause	Requirement - Test	Result - Remark	Verdict
	- to permit checking of conductors with respect to correct positioning and connection before fitting any cover		N/A
	- so there is no risk of damage to the conductors or their insulation when fitting the cover		N/A
	- for portable appliances, so that the uninsulated end of a conductor, if it becomes free from the terminal, prevented from contact with accessible metal parts		N/A
	2 N test to the conductor for portable appliances; no contact with accessible metal parts		N/A
25.22	Appliance inlets:		—
	- live parts not accessible during insertion or removal		N/A
	Requirement not applicable to appliance inlets complying with IEC 60320-1		P
	- connector can be inserted without difficulty		P
	- the appliance is not supported by the connector		P
	- not for cold conditions if temp. rise of external metal parts exceeds 75 K during clause 11, unless		N/A
	the supply cord is unlikely to touch such metal parts		N/A
25.23	Interconnection cords comply with the requirements for the supply cord, except that:		N/A
	- the cross-sectional area of the conductors is determined on the basis of the maximum current during clause 11		N/A
	- the thickness of the insulation may be reduced		N/A
	If necessary, electric strength test of 16.3		N/A
25.24	Interconnection cords not detachable without the aid of a tool if compliance with this standard is impaired when they are disconnected		N/A
25.25	Dimensions of pins that are inserted into socket-outlets compatible with the dimensions of the relevant socket-outlet.		N/A
	Dimensions of pins and engagement face in accordance with the dimensions of the relevant plug in IEC/TR 60083		N/A
26	TERMINALS FOR EXTERNAL CONDUCTORS		—
26.1	Appliances provided with terminals or equally effective devices for connection of external conductors		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Terminals only accessible after removal of a non-detachable cover, except		P
	for class III appliances that do not contain live parts		N/A
	Earthing terminals may be accessible if a tool is required to make the connections and means are provided to clamp the wire independently from its connection		N/A
26.2	Appliances with type X attachment and appliances for the connection of cables to fixed wiring provided with terminals in which connections are made by means of screws, nuts or similar devices, unless		N/A
	the connections are soldered		N/A
	Screws and nuts not used to fix any other component, except		N/A
	internal conductors, if so arranged that they are unlikely to be displaced when fitting the supply conductors		N/A
	If soldered connections used, the conductor so positioned or fixed that reliance is not placed on soldering alone, unless		N/A
	barriers provided so that neither clearances nor creepage distances between live parts and other metal parts reduced below the values for supplementary insulation if the conductor becomes free at the soldered joint		N/A
26.3	Terminals for type X attachment and for connection of cables of fixed wiring so constructed that the conductor is clamped between metal surfaces with sufficient contact pressure but without damaging the conductor		N/A
	Terminals fixed so that when the clamping means is tightened or loosened:		—
	- the terminal does not become loose		N/A
	- internal wiring is not subjected to stress		N/A
	- neither clearances nor creepage distances are reduced below the values in clause 29		N/A
	Compliance checked by inspection and by the test of subclause 9.6 of IEC 60999-1, the torque applied being equal to two-thirds of the torque specified (Nm).....:		N/A
	No deep or sharp indentations of the conductors		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
26.4	Terminals for type X attachment, except those having a specially prepared cord and those for the connection of cables of fixed wiring, no special preparation of conductors such as by soldering, use of cable lugs, eyelets or similar, and		N/A
	so constructed or placed that conductors prevented from slipping out when clamping screws or nuts are tightened		N/A
26.5	Terminals for type X attachment so located or shielded that if a wire of a stranded conductor escapes, no risk of accidental connection to other parts that result in a hazard		N/A
	Stranded conductor test, 8 mm insulation removed		N/A
	No contact between live parts and accessible metal parts and,		N/A
	for class II constructions, between live parts and metal parts separated from accessible metal parts by supplementary insulation only		N/A
26.6	Terminals for type X attachment and for connection of cables of fixed wiring suitable for connection of conductors with cross-sectional area according to table 13; rated current (A); nominal cross-sectional area (mm <sup>2</sup> ).....:		N/A
	If a specially prepared cord is used, terminals need only be suitable for that cord		N/A
26.7	Terminals for type X attachment, except in class III appliances not containing live parts, accessible after removal of a cover or part of the enclosure		N/A
26.8	Terminals for the connection of fixed wiring, including the earthing terminal, located close to each other		N/A
26.9	Terminals of the pillar type constructed and located as specified		N/A
26.10	Terminals with screw clamping and screwless terminals not used for flat twin tinsel cords, unless		N/A
	conductors ends fitted with means suitable for screw terminals		N/A
	Pull test of 5 N to the connection		N/A
26.11	For type Y and Z attachment, soldered, welded, crimped or similar connections may be used		N/A
	For Class II appliances, the conductor so positioned or fixed that reliance is not placed on soldering, welding or crimping alone		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	If soldering, welding or crimping alone used, barriers provided so that clearances and creepage distances between live parts and other metal parts are not reduced below the values for supplementary insulation if the conductor becomes free		N/A
27	PROVISION FOR EARTHING		—
27.1	Accessible metal parts of Class 0I and I appliances permanently and reliably connected to an earthing terminal or earthing contact of the appliance inlet		N/A
	Earthing terminals and earthing contacts not connected to the neutral terminal		N/A
	Class 0, II and III appliances have no provision for earthing		P
	Safety extra-low voltage circuits not earthed, unless		N/A
	protective extra-low voltage circuits		N/A
27.2	Clamping means of earthing terminals adequately secured against accidental loosening		N/A
	Terminals for the connection of external equipotential bonding conductors allow connection of conductors of 2.5 to 6 mm <sup>2</sup> , and		N/A
	do not provide earthing continuity between different parts of the appliance, and		N/A
	conductors cannot be loosened without the aid of a tool		N/A
27.3	For a detachable part having an earth connection and being plugged into another part of the appliance, the earth connection is made before and separated after current-carrying connections when removing the part		N/A
	For appliances with supply cords, current-carrying conductors become taut before earthing conductor, if the cord slips out of the cord anchorage		N/A
27.4	No risk of corrosion resulting from contact between parts of the earthing terminal and the copper of the earthing conductor or other metal		N/A
	Parts providing earthing continuity, other than parts of a metal frame or enclosure, have adequate resistance to corrosion		N/A
	If of steel, these parts provided with an electroplated coating with a thickness at least 5 µm		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Adequate protection against rusting of parts of coated or uncoated steel, only intended to provide or transmit contact pressure		N/A
	In the body of the earthing terminal is a part of a frame or enclosure of aluminium or aluminium alloys, precautions taken to avoid risk of corrosion		N/A
27.5	Low resistance of connection between earthing terminal and earthed metal parts		N/A
	This requirement does not apply to connections providing earthing continuity in the protective extra-low voltage circuit, provided the clearances of basic insulation are based on the rated voltage of the appliance		N/A
	Resistance not exceeding $0,1 \Omega$ at the specified low-resistance test ( $\Omega$ ) .....		N/A
27.6	The printed conductors of printed circuit boards not used to provide earthing continuity in hand-held appliances.		N/A
	They may be used to provide earthing continuity in other appliances if at least two tracks are used with independent soldering points and the appliance complies with 27.5 for each circuit		N/A
28	SCREWS AND CONNECTIONS		—
28.1	Fixings, electrical connections and connections providing earthing continuity withstand mechanical stresses		P
	Screws not of soft metal liable to creep, such as zinc or aluminium		P
	Diameter of screws of insulating material min. 3 mm		N/A
	Screws of insulating material not used for any electrical connections or connections providing earthing continuity		N/A
	Screws used for electrical connections or connections providing earthing continuity screwed into metal		N/A
	Screws not of insulating material if their replacement by a metal screw can impair supplementary or reinforced insulation		N/A
	For type X attachment, screws to be removed for replacement of supply cord or for user maintenance, not of insulating material if their replacement by a metal screw impairs basic insulation		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	For screws and nuts; torque-test as specified in table 14.....:		N/A
28.2	Electrical connections and connections providing earthing continuity constructed so that contact pressure is not transmitted through non-ceramic insulating material liable to shrink or distort, unless		N/A
	there is resiliency in the metallic parts to compensate for shrinkage or distortion of the insulating material		N/A
	This requirement does not apply to electrical connections in circuits of appliances for which:		—
	<ul style="list-style-type: none"> <li>• 30.2.2 is applicable and that carry a current not exceeding 0,5 A</li> </ul>		N/A
	<ul style="list-style-type: none"> <li>• 30.2.3 is applicable and that carry a current not exceeding 0,2 A</li> </ul>		N/A
28.3	Space-threaded (sheet metal) screws only used for electrical connections if they clamp the parts together		N/A
	Thread-cutting (self-tapping) screws and thread rolling screws only used for electrical connections if they generate a full form standard machine screw thread		N/A
	Thread-cutting (self-tapping) screws not used if they are likely to be operated by the user or installer		N/A
	Thread-cutting, thread rolling and space threaded screws may be used in connections providing earthing continuity provided it is not necessary to disturb the connection:		—
	- in normal use,		N/A
	- during user maintenance,		N/A
	- when replacing a supply cord having a type X attachment, or		N/A
	- during installation		N/A
	At least two screws being used for each connection providing earthing continuity, unless		N/A
	the screw forms a thread having a length of at least half the diameter of the screw		N/A
28.4	Screws and nuts that make mechanical connection secured against loosening if they also make electrical connections or connections providing earthing continuity		N/A
	This requirement does not apply to screws in the earthing circuit if at least two screws are used, or		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	if an alternative earthing circuit is provided		N/A
	Rivets for electrical connections or connections providing earthing continuity secured against loosening if the connections are subjected to torsion		N/A
29	CLEARANCES, CREEPAGE DISTANCES AND SOLID INSULATION		—
	Clearances, creepage distances and solid insulation withstand electrical stress		P
	For coatings used on printed circuits boards to protect the microenvironment (Type 1) or to provide basic insulation (Type 2), Annex J applies.....:		N/A
	The microenvironment is pollution degree 1 under type 1 protection		N/A
	For type 2 protection, the spacing between the conductors before the protection is applied is not less than the values specified in Table 1 of IEC 60664-3		N/A
	These values apply to functional, basic, supplementary and reinforced insulation .....		N/A
29.1	Clearances not less than the values specified in table 16, taking into account the rated impulse voltage for the overvoltage categories of table 15, unless .....	(see appended table)	P
	for basic insulation and functional insulation they comply with the impulse voltage test of clause 14		N/A
	However, if the distances are affected by wear, distortion, movement of the parts or during assembly, the clearances for rated impulse voltages of 1500V and above are increased by 0,5 mm and the impulse voltage test is not applicable		N/A
	Impulse voltage test is not applicable:		N/A
	- when the microenvironment is pollution degree 3, or		P
	- for basic insulation of class 0 and class 01 appliances		N/A
	Appliances are in overvoltage category II		P
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P
29.1.1	Clearances of basic insulation withstand the overvoltages, taking into account the rated impulse voltage		P

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Clause	Requirement - Test	Result - Remark	Verdict
	The values of table 16 or the impulse voltage test of clause 14 are applicable.....:	(see appended table)	P
	Clearance at the terminals of tubular sheathed heating elements may be reduced to 1,0 mm if the microenvironment is pollution degree 1		N/A
	Lacquered conductors of windings considered to be bare conductors		P
29.1.2	Clearances of supplementary insulation not less than those specified for basic insulation in table 16:	(see appended table)	P
29.1.3	Clearances of reinforced insulation not less than those specified for basic insulation in table 16, using the next higher step for rated impulse voltage .....	(see appended table)	P
	For double insulation, with no intermediate conductive part between basic and supplementary insulation, clearances are measured between live parts and the accessible surface, and the insulation system is treated as reinforced insulation		P
29.1.4	Clearances for functional insulation are the largest values determined from:		—
	- table 16 based on the rated impulse voltage .....: (see appended table)		P
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		P
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If values of table 16 are largest, the impulse voltage test of clause 14 may be applied instead, unless		N/A
	the microenvironment is pollution degree 3, or		P
	the distances can be affected by wear, distortion, movement of the parts or during assembly		N/A
	However, clearances are not specified if the appliance complies with clause 19 with the functional insulation short-circuited		N/A
	Lacquered conductors of windings considered to be bare conductors		P
	However, clearances at crossover points are not measured		P
	Clearance between surfaces of PTC heating elements may be reduced to 1mm		N/A
29.1.5	Appliances having higher working voltages than rated voltage, clearances for basic insulation are the largest values determined from:		—
	- table 16 based on the rated impulse voltage .....:		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- table F.7a in IEC 60664-1, frequency not exceeding 30 kHz		N/A
	- clause 4 of IEC 60664-4, frequency exceeding 30 kHz		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1 or Clause 4 of IEC 60664-4, the clearances of supplementary insulation are not less than those specified for basic insulation		N/A
	If clearances for basic insulation are selected from Table F.7a of IEC 60664-1, the clearances of reinforced insulation dimensioned as specified in Table F.7a are to withstand 160% of the withstand voltage required for basic insulation		N/A
	If clearances for basic insulation are selected from Clause 4 of IEC 60664-4, the clearances of reinforced insulation are twice the value required for basic insulation		N/A
	If the secondary winding of a step-down transformer is earthed, or if there is an earthed screen between the primary and secondary windings, clearances of basic insulation on the secondary side not less than those specified in table 16, but using the next lower step for rated impulse voltage		N/A
	Circuits supplied with a voltage lower than rated voltage, clearances of functional insulation are based on the working voltage used as the rated voltage in table 15		P
29.2	Creepage distances not less than those appropriate for the working voltage, taking into account the material group and the pollution degree.....:	(see appended table)	P
	Pollution degree 2 applies, unless		N/A
	- precautions taken to protect the insulation; pollution degree 1		N/A
	- insulation subjected to conductive pollution; pollution degree 3		P
A	Microenvironment is pollution degree 3 unless insulation is enclosed or located that it is unlikely to be exposed to pollution during normal use. (IEC 60335-2-80)		P
	A force of 2 N is applied to bare conductors, other than heating elements		P
	A force of 30 N is applied to accessible surfaces		P

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Clause	Requirement - Test	Result - Remark	Verdict
	In a double insulation system, the working voltage for both the basic and supplementary insulation is taken as the working voltage across the complete double insulation system		P
29.2.1	Creepage distances of basic insulation not less than specified in table 17 .....	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 17 .....		N/A
	Except for pollution degree 1, corresponding creepage distance not less than the minimum specified for the clearance in table 16, if the clearance has been checked according to the test of clause 14 .....		N/A
29.2.2	Creepage distances of supplementary insulation at least those specified for basic insulation in table 17, or .....	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable .....		N/A
29.2.3	Creepage distances of reinforced insulation at least double those specified for basic insulation in table 17, or .....	(see appended table)	P
	Table 2 of IEC 60664-4, as applicable .....		N/A
29.2.4	Creepage distances of functional insulation not less than specified in table 18.....	(see appended table)	P
	However, if the working voltage is periodic and has a frequency exceeding 30 kHz, the creepage distances are also determined from table 2 of IEC 60664-4, these values being used if exceeding the values in table 18 .....		N/A
	Creepage distances may be reduced if the appliance complies with clause 19 with the functional insulation short-circuited		N/A
29.3	Supplementary and reinforced insulation have adequate thickness, or a sufficient number of layers, to withstand the electrical stresses		P
	Compliance checked:		—
	- by measurement, in accordance with 29.3.1, or		P
	- by an electric strength test in accordance with 29.3.2, or		N/A
	- by an assessment of the thermal quality of the material combined with an electric strength test, in accordance with 29.3.3, and		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	for accessible parts of reinforced insulation consisting of a single layer, by measurement in accordance with 29.3.4, or		N/A
	- as specified in subclause 6.3 of IEC 60664-4 for insulation that is subjected to any periodic voltage having a frequency exceeding 30 kHz		N/A
29.3.1	Supplementary insulation have a thickness of at least 1 mm		P
	Reinforced insulation have a thickness of at least 2 mm		P
29.3.2	Each layer of material withstand the electric strength test of 16.3 for supplementary insulation		N/A
	Supplementary insulation consist of at least 2 layers		N/A
	Reinforced insulation consist of at least 3 layers		N/A
29.3.3	The insulation is subjected to the dry heat test Bb of IEC 60068-2-2, followed by the electric strength test of 16.3		N/A
	If the temperature rise during the tests of clause 19 does not exceed the value specified in table 3, the test of IEC 60068-2-2 is not carried out		N/A
29.3.4	Thickness of accessible parts of reinforced insulation consisting of a single layer not less than specified in table 19.....:		N/A
30	RESISTANCE TO HEAT AND FIRE		—
30.1	External parts of non-metallic material, parts supporting live parts, and		P
	parts of thermoplastic material providing supplementary or reinforced insulation		P
	sufficiently resistant to heat		P
	Ball-pressure test according to IEC 60695-10-2		P
	External parts tested at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 75 °C, whichever is the higher; temperature (°C).....:	(see appended table)	P
	Parts supporting live parts tested at 40°C plus the maximum temperature rise determined during the test of clause 11, or at 125 °C, whichever is the higher; temperature (°C) .....	(see appended table)	P

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Clause	Requirement - Test	Result - Remark	Verdict
	Parts of thermoplastic material providing supplementary or reinforced insulation tested at 25 °C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C) .....:		N/A
30.2	Parts of non-metallic material resistant to ignition and spread of fire		P
	This requirement does not apply to:		—
	parts having a mass not exceeding 0,5 g, provided the cumulative effect is unlikely to propagate flames that originate inside the appliance by propagating flames from one part to another, or		N/A
	decorative trims, knobs and other parts unlikely to be ignited or to propagate flames that originate inside the appliance		P
	Compliance checked by the tests of 30.2.1 and 30.2.3		P
	For base material of printed circuit boards, 30.2.4 applies		P
30.2.1	Parts of non-metallic material subjected to the glow-wire test of IEC 60695-2-11 at 550 °C		P
	However, test not carried out if the material is classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 550 °C, or		N/A
	the material is classified at least HB40 according to IEC 60695-11-10		N/A
	Parts for which the glow-wire test cannot be carried out need to meet the requirements in ISO 9772 for material classified HBF		N/A
30.2.2	Not applicable. (IEC 60335-2-80)		N/A
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		P
	The tests are not applicable to conditions as specified .....		N/A
30.2.3.1	Parts of non-metallic material supporting connections carrying a current exceeding 0,2 A during normal operation, and		N/A
	parts of non-metallic material, other than small parts, within a distance of 3 mm,		N/A
	subjected to the glow-wire test of IEC 60695-2-11 with a test severity of 850 °C		N/A
	Glow-wire applied to an interposed shielding material, if relevant		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	The glow-wire test is not carried out on parts of material classified as having a glow-wire flammability index according to IEC 60695-2-12 of at least 850 °C		N/A
30.2.3.2	Parts of non-metallic material supporting connections, and		P
	parts of non-metallic material within a distance of 3mm,		P
	subjected to glow-wire test of IEC 60695-2-11		P
	The test severity is:		—
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		P
	Glow-wire applied to an interposed shielding material, if relevant		N/A
	However, the glow-wire test of 750 °C or 650 °C as appropriate, is not carried out on parts of material fulfilling both or either of the following classifications:		—
	- a glow-wire ignition temperature according to IEC 60695-2-13 of at least:		N/A
	• 775 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	• 675 °C, for other connections		N/A
	- a glow-wire flammability index according to IEC 60695-2-12 of at least:		N/A
	- 750 °C, for connections carrying a current exceeding 0,2 A during normal operation		N/A
	- 650 °C, for other connections		N/A
	The glow-wire test is also not carried out on small parts. These parts are to:		—
	- comprise material having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- comprise material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- comply with the needle-flame test of Annex E, or		N/A
	- comprise material classified as V-0 or V-1 according to IEC 60695-11-10		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	The consequential needle-flame test of Annex E applied to non-metallic parts that encroach within the vertical cylinder placed above the centre of the connection zone and on top of the non-metallic parts supporting current-carrying connections, and parts of non-metallic material within a distance of 3 mm of such connections if these parts are those:		—
	- parts that withstood the glow-wire test of IEC 60695-2-11 of 750 °C or 650 °C as appropriate, but produce a flame that persist longer than 2 s, or		N/A
	- parts that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts, that comprised material having a glow-wire flammability index of at least 750 °C or 650 °C as appropriate, or		N/A
	- small parts for which the needle-flame test of Annex E was applied, or		N/A
	- small parts for which a material classification of V-0 or V-1 was applied		N/A
	However, the consequential needle-flame test is not carried out on non-metallic parts, including small parts, within the cylinder that are:		—
	- parts having a glow-wire ignition temperature of at least 775 °C or 675 °C as appropriate, or		N/A
	- parts comprising material classified as V-0 or V-1 according to IEC 60695-11-10, or		N/A
	- parts shielded by a flame barrier that meets the needle-flame test of Annex E or that comprises material classified as V-0 or V-1 according to IEC 60695-11-10		N/A
30.2.4	Base material of printed circuit boards subjected to the needle-flame test of Annex E		N/A
	Test not applicable to conditions as specified.....: V-0		P
31	RESISTANCE TO RUSTING		—
	Relevant ferrous parts adequately protected against rusting		P
	Tests specified in part 2 when necessary		N/A
32	RADIATION, TOXICITY AND SIMILAR HAZARDS		—
	Appliance does not emit harmful radiation or present a toxic or similar hazard due to their operation in normal use		P
	Compliance is checked by the limits or tests specified in part 2, if relevant		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
A	ANNEX A (INFORMATIVE) ROUTINE TESTS		—
	Description of routine tests to be carried out by the manufacturer		N/A
B	ANNEX B (NORMATIVE) APPLIANCES POWERED BY RECHARGEABLE BATTERIES		—
	The following modifications to this standard are applicable for appliances powered by batteries that are recharged in the appliance		P
	This annex does not apply to battery chargers		N/A
3.1.9	Appliance operated under the following conditions:		—
	- the appliance, supplied by its fully charged battery, operated as specified in relevant part 2		P
	- the battery is charged, the battery being initially discharged to such an extent that the appliance cannot operate		P
	-if possible, the appliance is supplied from the supply mains through its battery charger, the battery being initially discharged to such an extent that the appliance cannot operate. The appliance is operated as specified in relevant part 2		P
	- if the appliance incorporates inductive coupling between two parts that are detachable from each other, the appliance is supplied from the supply mains with the detachable part removed		N/A
3.6.2	Part to be removed in order to discard the battery is not considered to be detachable		P
5.B.101	Appliances supplied from the supply mains tested as specified for motor-operated appliances		P
7.1	Battery compartment for batteries intended to be replaced by the user, marked with battery voltage and polarity of the terminals		N/A
	The positive terminal indicated by symbol IEC 60417-5005 and the negative terminal by symbol IEC 60417-5006		N/A
7.6	Symbols 60417-5005 and IEC 60417-5006		N/A
7.12	The instructions give information regarding charging		P
	The instructions for appliances incorporating batteries intended to be replaced by the user includes required information		N/A
	Details about how to remove batteries containing materials hazardous to the environment given		P

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Clause	Requirement - Test	Result - Remark	Verdict
7.15	Markings placed on the part of the appliance connected to the supply mains		P
8.2	Appliances having batteries that according to the instruction may be replaced by the user need only have basic insulation between live parts and the inner surface of the battery compartment		N/A
	If the appliance can be operated without batteries, double or reinforced insulation required		P
11.7	The battery is charged for the period stated in the instructions or 24 h .....		P
19.1	Appliances subjected to tests of 19.B.101, 19.B.102 and 19.B.103		P
19.10	Not applicable		N/A
19.B.101	Appliances supplied at rated voltage for 168 h, the battery being continually charged		P
19.B.102	For appliances having batteries that can be removed without the aid of a tool, short-circuit of the terminals of the battery, the battery being fully charged,		N/A
19.B.103	Appliances having batteries replaceable by the user supplied at rated voltage under normal operation with the battery removed or in any position allowed by the construction		N/A
21.B.101	Appliances having pins for insertion into socket-outlets have adequate mechanical strength		N/A
	Part of the appliance incorporating the pins subjected to the free fall test, procedure 2, of IEC 60068-2-31, the number of falls being:		—
	- 100, if the mass of the part does not exceed 250 g (g) .....		N/A
	- 50, if the mass of the part exceeds 250 g .....		N/A
	After the test, the requirements of 8.1, 15.1.1, 16.3 and clause 29 are met		N/A
22.3	Appliances having pins for insertion into socket-outlets tested as fully assembled as possible		N/A
25.13	An additional lining or bushing not required for interconnection cords in class III appliances or class III constructions operating at safety extra-low voltage not containing live parts		N/A
30.2	For parts of the appliance connected to the supply mains during the charging period, 30.2.3 applies		P
	For other parts, 30.2.2 applies		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
C	ANNEX C (NORMATIVE) AGEING TEST ON MOTORS		—
	Tests, as described, carried out when doubt with regard to the temperature classification of the insulation of a motor winding		N/A
	Test conditions as specified		N/A
D	ANNEX D (NORMATIVE) THERMAL MOTOR PROTECTORS		—
	Applicable to appliances having motors that incorporate thermal motor protectors necessary for compliance with the standard		N/A
	Test conditions as specified		N/A
E	ANNEX E (NORMATIVE) NEEDLE-FLAME TEST		—
	Needle-flame test carried out in accordance with IEC 60695-11-5, with the following modifications:		N/A
7	Severities		—
	The duration of application of the test flame is 30 s ± 1 s		N/A
9	Test procedure		—
9.1	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1		N/A
9.2	The first paragraph does not apply		N/A
	If possible, the flame is applied at least 10 mm from a corner		N/A
9.3	The test is carried out on one specimen		N/A
	If the specimen does not withstand the test, the test may be repeated on two additional specimens, both withstanding the test		N/A
11	Evaluation of test results		—
	The duration of burning not exceeding 30 s		N/A
	However, for printed circuit boards, the duration of burning not exceeding 15 s		N/A
F	ANNEX F (NORMATIVE) CAPACITORS		—
	Capacitors likely to be permanently subjected to the supply voltage, and used for radio interference suppression or voltage dividing, comply with the following clauses of IEC 60384-14, with the following modifications:		—
1.5	Terms and definitions		N/A



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Clause	Requirement - Test	Result - Remark	Verdict
1.5.3	Class X capacitors tested according to subclass X2		N/A
1.5.4	This subclause is applicable		N/A
1.6	Marking		—
	Items a) and b) are applicable		N/A
3.4	Approval testing		—
3.4.3.2	Table 3 is applicable as described		N/A
4.1	Visual examination and check of dimensions		N/A
	This subclause is applicable		N/A
4.2	Electrical tests		—
4.2.1	This subclause is applicable		N/A
4.2.5	This subclause is applicable		N/A
4.2.5.2	Only table 11 is applicable		N/A
	Values for test A apply		N/A
	However, for capacitors in heating appliances the values for test B or C apply		N/A
4.12	Damp heat, steady state		—
	This subclause is applicable		N/A
	Only insulation resistance and voltage proof are checked		N/A
4.13	Impulse voltage		—
	This subclause is applicable		N/A
4.14	Endurance		—
	Subclauses 4.14.1, 4.14.3, 4.14.4 and 4.14.7 are applicable		N/A
4.14.7	Only insulation resistance and voltage proof are checked		N/A
	No visible damage		N/A
4.17	Passive flammability test		—
	This subclause is applicable		N/A
4.18	Active flammability test		—
	This subclause is applicable		N/A
G	ANNEX G (NORMATIVE) SAFETY ISOLATING TRANSFORMERS		—
	The following modifications to this standard are applicable for safety isolating transformers:		—

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Clause	Requirement - Test	Result - Remark	Verdict
7	Marking and instructions		—
7.1	Transformers for specific use marked with:		—
	-name, trademark or identification mark of the manufacturer or responsible vendor .....	Manufacture: Kennede Electronics Mfg. Co., Ltd.	P
	-model or type reference .....	EI66X28; EI57X25; EI48X28	P
17	Overload protection of transformers and associated circuits		—
	Fail-safe transformers comply with subclause 15.5 of IEC 61558-1		N/A
22	Construction		—
	Subclauses 19.1 and 19.1.2 of IEC 61558-2-6 are applicable		P
29	Clearances, creepage distances and solid insulation		—
29.1, 29.2, 29.3	The distances specified in items 2a, 2c and 3 in table 13 of IEC 61558-1 apply	Cr: 13,6mm Cl: 12mm Solid insulation: 1,8mm	P
	For insulated winding wires complying with subclause 19.12.3 of IEC 61558-1 there are no requirements for clearances or creepage distances		N/A
	For windings providing reinforced insulation, the distance specified in item 2c of table 13 of IEC 61558-1 is not assessed		N/A
	For safety isolating transformers subjected to periodic voltages with a frequency exceeding 30 kHz, the clearances, creepage distances and solid insulation values specified in IEC 60664-4 are applicable, if greater than the values specified in items 2a, 2c and 3 in table 13 of IEC 61558-1		N/A
H	ANNEX H (NORMATIVE) SWITCHES		—
	Switches comply with the following clauses of IEC 61058-1, as modified below:		—
	The tests of IEC 61058-1 carried out under the conditions occurring in the appliance	SS22F25G7, S22F25G9	P
	Before being tested, switches are operated 20 times without load		P
8	Marking and documentation		—
	Switches are not required to be marked		P
	However, a switch that can be tested separately from the appliance marked with the manufacturer's name or trade mark and the type reference		N/A
13	Mechanism		—
	The tests may be carried out on a separate sample		P

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Clause	Requirement - Test	Result - Remark	Verdict
15	Insulation resistance and dielectric strength		—
15.1	Not applicable		P
15.2	Not applicable		P
15.3	Applicable for full disconnection and micro-disconnection		P
17	Endurance		—
	Compliance is checked on three separate appliances or switches		P
	For 17.2.4.4, the number of cycles declared according to 7.1.4 is 10 000, unless		P
	otherwise specified in 24.1.3 of the relevant part 2 of IEC 60335 .....		N/A
	Switches for operation under no load and which can be operated only by a tool, and		N/A
	switches operated by hand that are interlocked so that they cannot be operated under load,		N/A
	are not subjected to the tests		N/A
	However, switches without this interlock are subjected to the test of 17.2.4.4 for 100 cycles of operation		N/A
	Subclauses 17.2.2 and 17.2.5.2 not applicable		P
	The ambient temperature during the test is that occurring in the appliance during the test of Clause 11 in IEC 60335-1		P
	The temperature rise of the terminals not more than 30 K above the temperature rise measured in clause 11 of IEC 60335-1 (K).....:	16,5K < 30K	P
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies		—
	This clause is applicable to clearances and creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in table 24		P
I	ANNEX I (NORMATIVE) MOTORS HAVING BASIC INSULATION THAT IS INADEQUATE FOR THE RATED VOLTAGE OF THE APPLIANCE		—
	The following modifications to this standard are applicable for motors having basic insulation that is inadequate for the rated voltage of the appliance:		P
8	Protection against access to live parts		—
8.1	Metal parts of the motor are considered to be bare live parts	For models KN-2903 & KN-2905	P

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Clause	Requirement - Test	Result - Remark	Verdict
11	Heating		—
11.3	The temperature rise of the body of the motor is determined instead of the temperature rise of the windings		P
11.8	The temperature rise of the body of the motor, where in contact with insulating material, not exceeding values in table 3 for the relevant insulating material		P
16	Leakage current and electric strength		—
16.3	Insulation between live parts of the motor and its other metal parts is not subjected to the test		P
19	Abnormal operation		—
19.1	The tests of 19.7 to 19.9 are not carried out		P
19.I.101	Appliance operated at rated voltage with each of the following fault conditions:		—
	- short circuit of the terminals of the motor, including any capacitor incorporated in the motor circuit		P
	- short circuit of each diode of the rectifier		P
	- open circuit of the supply to the motor		P
	- open circuit of any parallel resistor, the motor being in operation		N/A
	Only one fault simulated at a time, the tests carried out consecutively		P
22	Construction		—
22.I.101	For class I appliances incorporating a motor supplied by a rectifier circuit, the d.c. circuit being insulated from accessible parts of the appliance by double or reinforced insulation		N/A
	Compliance checked by the tests specified for double and reinforced insulation		N/A
J	ANNEX J (NORMATIVE) COATED PRINTED CIRCUIT BOARDS		—
	Testing of protective coatings of printed circuit boards carried out in accordance with IEC 60664-3 with the following modifications:		N/A
5.7	Conditioning of the test specimens		—
	When production samples are used, three samples of the printed circuit board are tested		N/A
5.7.1	Cold		—
	The test is carried out at -25 °C		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
5.7.3	Rapid change of temperature		N/A
	Severity 1 is specified		N/A
5.9	Additional tests		—
	This subclause is not applicable		N/A
K	ANNEX K (NORMATIVE) OVERVOLTAGE CATEGORIES		—
	The information on overvoltage categories is extracted from IEC 60664-1		P
	Overvoltage category is a numeral defining a transient overvoltage condition		P
	Equipment of overvoltage category IV is for use at the origin of the installation		N/A
	Equipment of overvoltage category III is equipment in fixed installations and for cases where the reliability and the availability of the equipment is subject to special requirements		N/A
	Equipment of overvoltage category II is energy consuming equipment to be supplied from the fixed installation		P
	If such equipment is subjected to special requirements with regard to reliability and availability, overvoltage category III applies		N/A
	Equipment of overvoltage category I is equipment for connection to circuits in which measures are taken to limit transient overvoltages to an appropriate low level		N/A
L	ANNEX L (INFORMATIVE) GUIDANCE FOR THE MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES		—
	Information for the determination of clearances and creepage distances		P
M	ANNEX M (NORMATIVE) POLLUTION DEGREE		—
	The information on pollution degrees is extracted from IEC 60664-1		P
	Pollution		—
	The microenvironment determines the effect of pollution on the insulation, taking into account the macroenvironment		P
	Means may be provided to reduce pollution at the insulation by effective enclosures or similar		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Minimum clearances specified where pollution may be present in the microenvironment		P
	Degrees of pollution in the microenvironment		—
	For evaluating creepage distances, the following degrees of pollution in the microenvironment are established:		—
	- pollution degree 1: no pollution or only dry, non-conductive pollution occurs. The pollution has no influence		N/A
	- pollution degree 2: only non-conductive pollution occurs, except that occasionally a temporary conductivity caused by condensation is to be expected		N/A
	- pollution degree 3: conductive pollution occurs or dry non-conductive pollution occurs that becomes conductive due to condensation that is to be expected		P
	- pollution degree 4: the pollution generates persistent conductivity caused by conductive dust or by rain or snow		N/A
N	ANNEX N (NORMATIVE) PROOF TRACKING TEST		—
	The proof tracking test is carried out in accordance with IEC 60112 with the following modifications:		—
7	Test apparatus		—
7.3	Test solutions		—
	Test solution A is used		P
10	Determination of proof tracking index (PTI)		—
10.1	Procedure		—
	The proof voltage is 100V, 175V, 400V or 600V...: 175V		P
	The test is carried out on five specimens		P
	In case of doubt, additional test with proof voltage reduced by 25V, the number of drops increased to 100		N/A
10.2	Report		—
	The report states if the PTI value was based on a test using 100 drops with a test voltage of (PTI-25) V		N/A
O	ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30		—
	Description of tests for determination of resistance to heat and fire		P

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Clause	Requirement - Test	Result - Remark	Verdict
P	ANNEX P (INFORMATIVE) GUIDANCE FOR THE APPLICATION OF THIS STANDARD TO APPLIANCES USED IN WARM DAMP EQUABLE CLIMATES		—
	Modifications applicable for class 0 and 01 appliances having a rated voltage exceeding 150V, intended to be used in countries having a warm damp equable climate and that are marked WDaE		N/A
	Modifications may also be applied to class 1 appliances having a rated voltage exceeding 150V, intended to be used in countries having a warm damp equable climate and that are marked WdaE, if liable to be connected to a supply mains that excludes the protective earthing conductor		N/A
5.7	The ambient temperature for the tests of clauses 11 and 13 is 40 +3/0 °C		N/A
7.1	The appliance marked with the letters WDaE		N/A
7.12	The instructions state that the appliance is to be supplied through a residual current device (RCD) having a rated residual operating current not exceeding 30 mA		N/A
	The instructions state that the appliance is considered to be suitable for use in countries having a warm damp equable climate, but may also be used in other countries		N/A
11.8	The values of Table 3 are reduced by 15 K		N/A
13.2	The leakage current for class I appliances not exceeding 0,5 mA		N/A
15.3	The value of $t$ is 37 °C		N/A
16.2	The leakage current for class I appliances not exceeding 0,5 mA (mA):		N/A
19.13	The leakage current test of 16.2 is applied in addition to the electric strength test of 16.3		N/A
Q	ANNEX Q (INFORMATIVE) SEQUENCE OF TESTS FOR THE EVALUATION OF ELECTRONIC CIRCUITS		—
	Description of tests for appliances incorporating electronic circuits		P
R	ANNEX R (NORMATIVE) SOFTWARE EVALUATION		—
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 validated in accordance with the requirements of this annex		N/A
R.1	Programmable electronic circuits using software		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 constructed so that the software does not impair compliance with the requirements of this standard		N/A
R.2	Requirements for the architecture		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2 use measures to control and avoid software-related faults/errors in safety-related data and safety-related segments of the software		N/A
R.2.1.1	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.2 have one of the following structures:		N/A
	- single channel with periodic self-test and monitoring		N/A
	- dual channel (homogenous) with comparison		N/A
	- dual channel (diverse) with comparison		N/A
	Programmable electronic circuits requiring software incorporating measures to control the fault/error conditions specified in table R.1 have one of the following structures:		N/A
	- single channel with functional test		N/A
	- single channel with periodic self-test		N/A
	- dual channel without comparison		N/A
R.2.2	Measures to control faults/errors		N/A
R.2.2.1	When redundant memory with comparison is provided on two areas of the same component, the data in one area is stored in a different format from that in the other area		N/A
R.2.2.2	Programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.2 and that use dual channel structures with comparison, have additional fault/error detection means for any fault/errors not detected by the comparison		N/A
R.2.2.3	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, means are provided for the recognition and control of errors in transmissions to external safety-related data paths		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
R.2.2.4	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the programmable electronic circuits incorporate measures to address the fault/errors in safety-related segments and data indicated in table R.1 and R.2 as appropriate		N/A
R.2.2.5	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, detection of a fault/error occur before compliance with clause 19 is impaired		N/A
R.2.2.6	The software is referenced to relevant parts of the operating sequence and the associated hardware functions		N/A
R.2.2.7	Labels used for memory locations are unique		N/A
R.2.2.8	The software is protected from user alteration of safety-related segments and data		N/A
R.2.2.9	Software and safety-related hardware under its control is initialized and terminates before compliance with clause 19 is impaired		N/A
R.3	Measures to avoid errors		N/A
R.3.1	General		—
	For programmable electronic circuits with functions requiring software incorporating measures to control the fault/error conditions specified in table R.1 or R.2, the following measures to avoid systematic fault in the software are applied		N/A
	Software that incorporates measures used to control the fault/error conditions specified in table R.2 is inherently acceptable for software required to control the fault/error conditions specified in table R.1		N/A
R.3.2	Specification		—
R.3.2.1	Software safety requirements:	Software Id:	N/A
	The specification of the software safety requirements includes the descriptions listed		N/A
R.3.2.2	Software architecture		—

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Clause	Requirement - Test	Result - Remark	Verdict
R.3.2.2.1	The specification of the software architecture includes the aspects listed - techniques and measures to control software faults/errors (refer to R.2.2); - interactions between hardware and software; - partitioning into modules and their allocation to the specified safety functions; - hierarchy and call structure of the modules (control flow); - interrupt handling; - data flow and restrictions on data access; - architecture and storage of data; - time-based dependencies of sequences and data	Document ref. No:	N/A
R.3.2.2.2	The architecture specification is validated against the specification of the software safety requirements by static analysis		N/A
R.3.2.3	Module design and coding		—
R.3.2.3.1	Based on the architecture design, software is suitably refined into modules		N/A
	Software module design and coding is implemented in a way that is traceable to the software architecture and requirements		N/A
R.3.2.3.2	Software code is structured		N/A
R.3.2.3.3	Coded software is validated against the module specification by static analysis		N/A
	The module specification is validated against the architecture specification by static analysis		N/A
R.3.3.3	Software validation		—
	The software is validated with reference to the requirements of the software safety requirements specification		N/A
	Compliance is checked by simulation of:		N/A
	- input signals present during normal operation		N/A
	- anticipated occurrences		N/A
	- undesired conditions requiring system action		N/A

TABLE R.1 – GENERAL FAULT/ERROR CONDITIONS						N/A
Component <sup>1)</sup>	Fault/error	Acceptable measures <sup>2) 3)</sup>	Definitions	Document reference for applied measure	Document reference for applied test	Verdict

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Clause	Requirement - Test		Result - Remark		Verdict	
1 CPU 1.1 Registers	Stuck at	Functional test, or periodic self-test using either: - static memory test, or - word protection with single bit redundancy	H.2.16.5 H.2.16.6 H.2.19.6 H.2.19.8.2			
1.2 VOID						
1.3 Programme counter	Stuck at	Functional test, or Periodic self-test, or Independent time-slot monitoring, or Logical monitoring of the programme sequence	H.2.16.5 H.2.16.6 H.2.18.10. 4  H.2.18.10. 2			
2 Interrupt handling and execution	No interrupt or too frequent interrupt	Functional test, or time-slot monitoring	H.2.16.5 H.2.18.10. 4			
3 Clock	Wrong frequency (for quartz synchronized clock: harmonics/sub-harmonics only)	Frequency monitoring, or time slot monitoring	H.2.18.10. 1  H.2.18.10. 4			
4. Memory 4.1 Invariable memory	All single bit faults	Periodic modified checksum, or multiple checksum, or word protection with single bit redundancy	H.2.19.3.1 H.2.19.3.2 H.2.19.8.2			
4.2 Variable memory	DC fault	Periodic static memory test, or word protection with single bit redundancy	H.2.19.6 H.2.19.8.2			
4.3 Addressing (relevant to variable and invariable memory)	Stuck at	Word protection with single bit redundancy including the address	H.2.19.8.2			

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Clause	Requirement - Test		Result - Remark		Verdict
5 Internal data path	Stuck at DC fault	Word protection with single bit redundancy Comparison of redundant CPUs by either: - reciprocal comparison - independent hardware comparator	H.2.19.8.2  H.2.18.15 H.2.18.3		
5.1 VOID					
5.2 Addressing	Wrong address	Word protection with single bit redundancy including the address	H.2.19.8.2		
6 External communication	Hamming distance 3	Word protection with multi-bit redundancy, or CRC – single work, or Transfer redundancy, or Protocol test	H.2.19.8.1  H.2.19.4.1 H.2.18.2.2 H.2.18.14		
6.1 VOID					
6.2 VOID					
6.3 Timing	Wrong point in time	Time-slot monitoring, or scheduled transmission Time-slot and logical monitoring, or Comparison of redundant communication channels by either: - reciprocal comparison - independent hardware comparator	H.2.18.10.4  H.2.18.18 H.2.18.10.3  H.2.18.15 H.2.18.3		
	Wrong sequence	Logical monitoring, or time-slot monitoring, or Scheduled transmission (same options as for wrong point in time)	H.2.18.10.2  H.2.18.10.4 H.2.18.18		

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Clause	Requirement - Test		Result - Remark		Verdict	
7 Input/output periphery	Fault conditions specified in 19.11.2	Plausibility check Comparison of redundant communication channels by either: - reciprocal comparison - independent hardware comparator	H.2.18.13  H.2.18.15 H.2.18.3			
7.1 VOID						
7.2 Analog I/O 7.2.1 A/D and D/A-converter	Fault conditions specified in 19.11.2	Plausibility check	H.2.18.13			
7.2.2 Analog multiplexer	Wrong addressing	Plausibility check	H.2.18.13			
8 VOID						
9 Custom chips <sup>4)</sup> e.g. ASIC, GAL, Gate array	Any output outside the static and dynamic functional specification	Periodic self-test	H.2.16.6			
NOTE A Stuck-at fault model denotes a fault model representing an open circuit or a non-varying signal level. A DC fault model denotes a stuck-at fault model incorporating short circuit between signal lines.						
<sup>1)</sup> For fault/error assessment, some components are divided into their sub-functions. <sup>2)</sup> For each sub-function in the table, the Table R.2 measure will cover the software fault/error. <sup>3)</sup> Where more than one measure is given for a sub-function, these are alternatives. <sup>4)</sup> To be divided as necessary by the manufacturer into sub-functions.						

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Clause	Requirement - Test				Result - Remark	Verdict
<b>10.1</b>	<b>TABLE: Power input deviation (at ambient 40 °C)</b>					
Input deviation of/at:	P rated (W)	P measured (W)	dP (W, %)	Required dP (W, %)	Remark	P
230V(KN-2905)	5	1,8	-64%	+20%		P
230V(KN-2903)	4	1,3	-67,5%	+20%		P
230V(KN-2712)	24	23,6	-1,7%	+20%		P
230V(KN-2926)	30	31,8	+6%	+20%		P
230V(KN-2918HR)	30	33,1	+10,3%	+20%		P
230V(KN-2912)	24	19,2	-20%	+20%		P
230V(KN-2916)	24	23,9	-0,4%	+20%		P
230V(KN-2914H)	24	23,4	-2,5%	+20%		P
230V(KN-2918H)	30	28,5	-5%	+20%		P
230V(KN-2914HR)	24	23,2	-3,3%	+20%		P
230V(KN-2926HR)	30	29,3	-2,3%	+20%		P
Supplementary information:						

<b>10.2</b>	<b>TABLE: Current deviation</b>					N/A
Current deviation of/at:	I rated (A)	I measured (A)	dl (A, %)	Required dl (A, %)	Remark	
Supplementary information:						

<b>11.8</b>	<b>TABLE: Heating test, thermocouple measurements, under tropical climate (for model KN-2905 / KN-2903 worked on AC and charge mode)</b>					P
	Test voltage (V) .....			254,4V		—
	Ambient (°C) .....			40°C		—
Thermocouple locations		Max. temperature rise measured, dT (K) KN-2905 / KN-2903			Max. temperature rise limit, dT (K)	
Pins of appliance inlet		10 / 11			45-15=30	
Motor case		9 / 18			85-15=70	
Holder of fan motor		8 / 15			For Cl.30	

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Clause	Requirement - Test	Result - Remark	Verdict
Main PCB		20 / 21	120-15=105
Internal wire		11 / 12	80-15=65
Control board		3 / 4	60-15=45
Battery		11 / 4	For reference
Holder for wire connector		8 / -	For Cl.30
Enclosure inside		12 / 5	For Cl.30
Enclosure outside		12 / 5	65-15=50
Test corner		2 / 6	65-15=50
Ambient of switch for motor		12 / 12	For Cl.30
Ambient of switch for lighting		10 / 9	For Cl.30
Heat shrinkable tube		4 / 3	125-15=110
LED lamp cover		6 / 12	60-15=45
Supplementary information:			

11.8	<b>TABLE: Heating test, resistance method</b>					N/A
	Test voltage (V) .....					—
	Ambient, t1 (°C) .....					—
	Ambient, t2 (°C) .....					—
Temperature rise of winding		R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class
Supplementary information:						

11.8	<b>TABLE: Heating test, thermocouple measurements, under tropical climate (for model KN-2905 / KN-2903 worked on fully charged battery)</b>			P
	Test voltage (V) .....		Battery operated	—
	Ambient (°C) .....		40°C	—
Thermocouple locations		Max. temperature rise measured, dT (K) KN-2905 / KN-2903		Max. temperature rise limit, dT (K)
Pins of appliance inlet		2 / 6		45-15=30
Motor case		4 / 16		85-15=70
Holder of fan motor		4 / 12		For Cl.30
Main PCB		3 / 6		120-15=105

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Clause	Requirement - Test	Result - Remark	Verdict
Internal wire		3 / 8	80-15=65
Control board		2 / 8	60-15=45
Battery		5 / 6	For reference
Holder for wire connector		4 / -	For Cl.30
Enclosure inside		3 / 6	For Cl.30
Enclosure outside		4 / 5	65-15=50
Test corner		2 / 5	65-15=50
Ambient of switch for motor		3 / 5	For Cl.30
Ambient of switch for lighting		3 / 4	For Cl.30
Heat shrinkable tube		3 / 3	125-15=110
LED lamp cover		2 / 11	60-15=45
Supplementary information:			

11.8	<b>TABLE: Heating test, resistance method</b>	N/A
	Test voltage (V) .....	—
	Ambient, t1 (°C) .....	—
	Ambient, t2 (°C) .....	—
Temperature rise of winding	R1 (Ω)	R2 (Ω)
	dT (K)	Max. dT (K)
		Insulation class
Supplementary information:		

11.8	<b>TABLE: Heating test, thermocouple measurements, under tropical climate (for model KN-2905 / KN-2903 when the battery is charging only)</b>	P
	Test voltage (V) .....	254,4V
	Ambient (°C) .....	25°C
Thermocouple locations	Max. temperature rise measured, dT (K) KN-2905 / KN-2903	Max. temperature rise limit, dT (K)
Pins of appliance inlet	8 / 11	45-15=30
Motor case	2 / 3	85-15=70
Holder of fan motor	2 / 3	For Cl.30
Main PCB	19 / 23	120-15=105
Internal wire	8 / 13	80-15=65

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Clause	Requirement - Test	Result - Remark	Verdict
Control board	2 / 6	60-15=45	
Battery	5 / 8	For reference	
Holder for wire connector	5 / -	For Cl.30	
Enclosure inside	4 / 6	For Cl.30	
Enclosure outside	4 / 4	65-15=50	
Test corner	3 / 3	65-15=50	
Ambient of switch for motor	10 / 14	For Cl.30	
Ambient of switch for lighting	9 / 11	For Cl.30	
Heat shrinkable tube	2 / 2	125-15=110	
LED lamp cover	3 / 2	60-15=45	
Supplementary information:			

11.8	TABLE: Heating test, resistance method					N/A
	Test voltage (V) .....				..... :	—
	Ambient, t1 (°C) .....				..... :	—
	Ambient, t2 (°C) .....				..... :	—
Temperature rise of winding		R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class
Supplementary information:						

11.8	TABLE: Heating test, thermocouple measurements, under tropical climate (for model KN-2712 / KN-2926 / KN-2912 / KN-2916 worked on AC and charge mode)			P
	Test voltage (V) .....			254,4V
	Ambient (°C) .....			40°C
Thermocouple locations		Max. temperature rise measured, dT (K) KN-2712 / KN-2926 / KN-2912 / KN-2916		Max. temperature rise limit, dT (K)
Pri-winding of transformer Class130 (B)		60 / 58 / 50 / 57		85-15=70
Sec-winding of transformer Class130 (B)		65 / 59 / 57 / 59		85-15=70
Winding of motor Class130 (B)		23 / 65 / 20 / 44		85-15=70
Holder of fan motor		18 / 57 / 16 / 39		For Cl.30

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Clause	Requirement - Test	Result - Remark	Verdict
Main PCB	37 / 73 / 82 / 70	120-15=105	
Internal wire	12 / 32 / 20 / 27	80-15=65	
Control board	5 / 6 / 3 / 11	60-15=45	
Battery	6 / 7 / 18 / 18	For reference	
Test corner	6 / 4 / 7 / 6	65-15=50	
Enclosure inside	20 / 25 / 14 / 16	For Cl.30	
Enclosure outside	11 / 22 / 10 / 13	65-15=50	
Ambient of switch for motor	10 / 19 / 18 / 17	For Cl.30	
Ambient of switch for lighting	11 / 18 / 15 / 16	For Cl.30	
Ambient of main selection switch	11 / 18 / 14 / 15	For Cl.30	
Heat shrinkable tube	17 / 22 / 12 / 14	125-15=110	
Pins for appliance inlet	20 / 15 / 15 / 21	45-15=30	
LED lamp cover	8 / 7 / 7 / 12	60-15=45	
Supplementary information:			

11.8	TABLE: Heating test, resistance method					P
	Test voltage (V) .....				254,4	—
	Ambient, t1 (°C) .....				40	—
	Ambient, t2 (°C) .....				40	—
Temperature rise of winding		R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class
Pri-winding of transformer(Class B) (model: EI48)		124,5	155,3	68	80	Class 130
Sec-winding of transformer(Class B) (model: EI48)		0,80	1,00	69	80	Class 130
Pri-winding of transformer(Class B) (model: EI57, 12,5V)		164,2	201,6	63	80	Class 130
Sec-winding of transformer(Class B) (model: EI57, 12,5V)		2,30	2,84	65	80	Class 130
Pri-winding of transformer(Class B) (model: EI57, 7,5V)		130,0	160,5	65	80	Class 130
Sec-winding of transformer(Class B) (model: EI57, 7,5V)		1,00	1,24	66	80	Class 130
Supplementary information:						

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Clause	Requirement - Test		Result - Remark		Verdict
11.8	<b>TABLE: Heating test, thermocouple measurements, under tropical climate</b> (for model KN-2712 / KN-2926 / KN-2912 / KN-2916 worked on fully charged battery)				P
	Test voltage (V) ..... : .....		Battery operated		—
	Ambient (°C) ..... : .....		40°C		—
Thermocouple locations		Max. temperature rise measured, dT (K) KN-2712 / KN-2926 / KN-2912 / KN-2916		Max. temperature rise limit, dT (K)	
Pri-winding of transformer Class130 (B)		1 / 1 / 2 / 6		85-15=70	
Sec-winding of transformer Class130 (B)		1 / 2 / 2 / 6		85-15=70	
Winding of motor Class130 (B)		14 / 56 / 15 / 26		85-15=70	
Holder of fan motor		12 / 48 / 11 / 23		For Cl.30	
Main PCB		9 / 36 / 17 / 20		120-15=105	
Internal wire		7 / 31 / 9 / 17		80-15=65	
Control board		3 / 4 / 4 / 6		60-15=45	
Battery		6 / 7 / 11 / 6		For reference	
Test corner		6 / 3 / 2 / 7		65-15=50	
Enclosure inside		1 / 3 / 4 / 6		For Cl.30	
Enclosure outside		9 / 6 / 4 / 7		65-15=50	
Ambient of switch for motor		2 / 9 / 7 / 10		For Cl.30	
Ambient of switch for lighting		3 / 9 / 5 / 6		For Cl.30	
Ambient of main selection switch		3 / 7 / 4 / 4		For Cl.30	
Heat shrinkable tube		11 / 18 / 10 / 12		125-15=110	
Pins for appliance inlet		1 / 1 / 2 / 6		45-15=30	
LED lamp cover		8 / 6 / 4 / 8		60-15=45	
Supplementary information:					

11.8	<b>TABLE: Heating test, resistance method</b>				N/A
	Test voltage (V) ..... : .....				—
	Ambient, t1 (°C) ..... : .....				—
	Ambient, t2 (°C) ..... : .....				—
Temperature rise of winding		R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)
					Insulation class

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Clause	Requirement - Test	Result - Remark		Verdict	
Supplementary information: The appliance is powered by battery ,transformer not worked					

<b>11.8</b>	<b>TABLE: Heating test, thermocouple measurements, under tropical climate (for model KN-2712 / KN-2926 / KN-2912 / KN-2916 when the battery is charging only)</b>	P
	Test voltage (V) .....	254,4V
	Ambient (°C) .....	25°C
Thermocouple locations	Max. temperature rise measured, dT (K) KN-2712 / KN-2926 / KN-2912 / KN-2916	Max.temperature rise limit, dT (K)
Pri-winding of transformer Class130 (B)	56 / 48 / 40 / 37	85-15=70
Sec-winding of transformer Class130 (B)	50 / 45 / 40 / 38	85-15=70
Winding of motor Class130 (B)	4 / 1 / 4 / 2	85-15=70
Holder of fan motor	4 / 2 / 4 / 2	For Cl.30
Main PCB	33 / 68 / 80 / 40	120-15=105
Internal wire	11 / 18 / 21 / 15	80-15=65
Control board	6 / 4 / 1 / 6	60-15=45
Battery	8 / 12 / 15 / 6	For reference
Test corner	11 / 1 / 8 / 3	65-15=50
Enclosure inside	21 / 15 / 15 / 12	For Cl.30
Enclosure outside	13 / 11 / 12 / 7	65-15=50
Ambient of switch for motor	10 / 30 / 18 / 17	For Cl.30
Ambient of switch for lighting	11 / 26 / 14 / 16	For Cl.30
Ambient of main selection switch	11 / 25 / 16 / 16	For Cl.30
Heat shrinkable tube	2 / 5 / 3 / 3	125-15=110
Pins for appliance inlet	23 / 12 / 16 / 16	45-15=30
LED lamp cover	3 / 3 / 2 / 2	60-15=45
Supplementary information:		

<b>11.8</b>	<b>TABLE: Heating test, resistance method</b>	P
	Test voltage (V) .....	254,4
	Ambient, t1 (°C) .....	25

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Clause	Requirement - Test		Result - Remark		Verdict	
	Ambient, t2 (°C)..... :			25	—	
Temperature rise of winding	R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class	
Pri-winding of transformer(Class B) (model: EI48)	124,5	154,2	62	80	Class 130	
Sec-winding of transformer(Class B) (model: EI48)	0,800	0,980	58	80	Class 130	
Pri-winding of transformer(Class B) (model: EI57, 12,5V)	164,0	200,5	58	80	Class 130	
Sec-winding of transformer(Class B) (model: EI57, 12,5V)	2,30	2,79	56	80	Class 130	
Pri-winding of transformer(Class B) (model: EI57, 7,5V)	130,0	152,5	45	80	Class 130	
Sec-winding of transformer(Class B) (model: EI57, 7,5V)	1,00	1,18	47	80	Class 130	
Supplementary information:						

11.8	<b>TABLE: Heating test, thermocouple measurements, under tropical climate</b> (for model KN-2918HR / KN-2926HR / KN-2914HR / KN-2918H / KN-2914H worked on AC and charge mode)	P
	Test voltage (V)..... :	254,4V
	Ambient (°C)..... :	40°C
Thermocouple locations	Max. temperature rise measured, dT (K) KN-2918H / KN-2926HR / KN-2914HR / KN-2918HR / KN-2914H	Max.temperature rise limit, dT (K)
Pri-winding of transformer Class130 (B)	57 / 66 / 49 / 62 / 51	85-15=70
Sec-winding of transformer Class130 (B)	53 / 66 / 45 / 61 / 49	85-15=70
Winding of motor Class130 (B)	34 / 57 / 39 / 33 / 37	85-15=70
Holder of fan motor	30 / 48 / 38 / 26 / 36	For Cl.30
Main PCB	45 / 55 / 49 / 45 / 63	120-15=105
Internal wire	26 / 24 / 24 / 25 / 30	80-15=65
Control board	9 / 5 / 8 / 9 / 10	60-15=45
Ambient of switch for motor	30 / - / - / - / 26	For Cl.30
Ambient of switch for lighting	28 / - / - / - / 25	For Cl.30
Ambient of main selection switch	25 / - / - / - / 24	For Cl.30
Battery	18 / 9 / 12 / 23 / 14	For reference

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Clause	Requirement - Test	Result - Remark	Verdict	
Test corner	6 / 3 / 6 / 11 / 8		65-15=50	
Enclosure inside	17 / 20 / 26 / 20 / 25		For Cl.30	
Enclosure outside	14 / 14 / 23 / 15 / 22		60-15=45	
Holder for wire connector	8 / 12 / 10 / 7 / 11		For Cl.30	
Heat shrinkable tube	25 / 32 / 28 / 20 / 26		125-15=110	
Pins for appliance inlet	20 / 19 / 19 / 16 / 19		45-15=30	
LED lamp cover	17 / 5 / 10 / 12 / 11		60-15=45	
Supplementary information:				

11.8	<b>TABLE: Heating test, resistance method</b>					P
	Test voltage (V) .....				254,4	—
	Ambient, t1 (°C) .....				40	—
	Ambient, t2 (°C) .....				40	—
Temperature rise of winding		R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class
Pri-winding of transformer(Class B) (model: EI57, 12,5V)		164,0	205,3	70	80	Class 130
Sec-winding of transformer(Class B) (model: EI57, 12,5V)		2,30	2,88	70	80	Class 130
Pri-winding of transformer(Class B) (model: EI57, 7,5V)		130,0	156,5	56	80	Class 130
Sec-winding of transformer(Class B) (model: EI57, 7,5V)		1,00	1,19	53	80	Class 130
Supplementary information:						

11.8	<b>TABLE: Heating test, thermocouple measurements, under tropical climate (for model KN-2918HR / KN-2926HR / KN-2914HR / KN-2918H / KN-2914H worked on fully charged battery)</b>			P
	Test voltage (V) .....			Battery operated
	Ambient (°C) .....			40°C
Thermocouple locations		Max. temperature rise measured, dT (K) KN-2918H / KN-2926HR / KN-2914HR / KN-2918HR / KN-2914H		Max. temperature rise limit, dT (K)
Pri-winding of transformer Class130 (B)		6 / 5 / 8 / 5 / 6		85-15=70
Sec-winding of transformer Class130 (B)		6 / 4 / 8 / 5 / 6		85-15=70

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Clause	Requirement - Test	Result - Remark	Verdict
Winding of motor Class130 (B)	26 / 37 / 25 / 26 / 25	85-15=70	
Holder of fan motor	22 / 32 / 24 / 21 / 24	For Cl.30	
Main PCB	30 / 15 / 20 / 15 / 16	120-15=105	
Internal wire	10 / 10 / 15 / 6 / 11	80-15=65	
Control board	6 / 4 / 7 / 5 / 6	60-15=45	
Ambient of switch for motor	20 / - / - / - / 9	For Cl.30	
Ambient of switch for lighting	17 / - / - / - / 10	For Cl.30	
Ambient of main selection switch	14 / - / - / - / 10	For Cl.30	
Battery	7 / 5 / 10 / 7 / 6	For reference	
Test corner	2 / 5 / 5 / 4 / 7	65-15=50	
Enclosure inside	6 / 12 / 14 / 15 / 11	For Cl.30	
Enclosure outside	5 / 7 / 11 / 14 / 10	60-15=45	
Holder for wire connector	5 / 6 / 10 / 4 / 4	For Cl.30	
Heat shrinkable tube	11 / 12 / 10 / 8 / 8	125-15=110	
Pins for appliance inlet	5 / 4 / 8 / 5 / 6	45-15=30	
LED lamp cover	15 / 5 / 9 / 8 / 7	60-15=45	
Supplementary information:			

11.8	<b>TABLE: Heating test, resistance method</b>	N/A
	Test voltage (V) .....	—
	Ambient, t1 (°C) .....	—
	Ambient, t2 (°C) .....	—
Temperature rise of winding		Insulation class
	R1 (Ω)	R2 (Ω)
	dT (K)	Max. dT (K)
Supplementary information: The appliance is powered by battery ,transformer not worked		

11.8	<b>TABLE: Heating test, thermocouple measurements, under tropical climate (for model KN-2918HR / KN-2926HR / KN-2914HR / KN-2918H / KN-2914H when the battery is charging only)</b>	P
	Test voltage (V) .....	254,4V
	Ambient (°C) .....	25°C

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Clause	Requirement - Test	Result - Remark			Verdict
Thermocouple locations	Max. temperature rise measured, dT (K) KN-2918H / KN-2926HR / KN- 2914HR / KN-2918HR / KN-2914H			Max.temperature rise limit, dT (K)	
Pri-winding of transformer Class130 (B)	36 / 36 / 32 / 44 / 33			85-15=70	
Sec-winding of transformer Class130 (B)	36 / 38 / 29 / 40 / 29			85-15=70	
Winding of motor Class130 (B)	1 / 3 / 3 / 2 / 1			85-15=70	
Holder of fan motor	1 / 3 / 1 / 1 / 1			For Cl.30	
Main PCB	35 / 28 / 28 / 34 / 30			120-15=105	
Internal wire	16 / 36 / 21 / 26 / 27			80-15=65	
Control board	4 / 4 / 4 / 8 / 6			60-15=45	
Ambient of switch for motor	25 / - / - / - / 15			For Cl.30	
Ambient of switch for lighting	22 / - / - / - / 15			For Cl.30	
Ambient of main selection switch	18 / - / - / - / 14			For Cl.30	
Battery	11 / 6 / 5 / 16 / 6			For reference	
Test corner	4 / 3 / 4 / 3 / 2			65-15=50	
Enclosure inside	6 / 6 / 5 / 13 / 7			For Cl.30	
Enclosure outside	6 / 3 / 3 / 9 / 6			60-15=45	
Holder for wire connector	1 / 2 / 1 / 1 / 1			For Cl.30	
Heat shrinkable tube	1 / 1 / 1 / 1 / 1			125-15=110	
Pins for appliance inlet	10 / 11 / 10 / 16 / 11			45-15=30	
LED lamp cover	2 / 1 / 1 / 4 / 2			60-15=45	
Supplementary information:					

11.8	TABLE: Heating test, resistance method					P
	Test voltage (V) .....			254,4		—
	Ambient, t1 (°C) .....			25		—
	Ambient, t2 (°C) .....			25		—
Temperature rise of winding		R1 (Ω)	R2 (Ω)	dT (K)	Max. dT (K)	Insulation class
Pri-winding of transformer(Class B) (model: EI57, 12,5V)		164,0	194,9	49	80	Class 130
Sec-winding of transformer(Class B) (model: EI57, 12,5V)		2,30	2,70	46	80	Class 130

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Clause	Requirement - Test	Result - Remark		Verdict	
Pri-winding of transformer(Class B) (model: EI57, 7,5V)	130,0	148,6	38	80	Class 130
Sec-winding of transformer(Class B) (model: EI57, 7,5V)	1,00	1,14	37	80	Class 130
Supplementary information:					

11.8	<b>TABLE: Heating test, thermocouple measurements, under tropical climate (for model KN-2926HR when worked on external DC source and charge mode)</b>	P
	Test voltage (V) ..... : DC 15V	—
	Ambient (°C) ..... : 40°C	—
Thermocouple locations	Max. temperature rise measured, dT (K)	Max.temperature rise limit, dT (K)
Winding of motor Class130 (B)	30	85-15=70
Holder of fan motor	29	For Cl.30
Main PCB	28	120-15=105
Internal wire	14	80-15=65
Control board	6	60-15=45
Battery	5	For reference
Test corner	6	65-15=50
Enclosure	9	60-15=45
Holder for wire connector	11	For Cl.30
Heat shrinkable tube	12	125-15=110
Pins for DC inlet	17	45-15=30
LED lamp cover	6	60-15=45
Supplementary information:		

13.2	<b>TABLE: Leakage current (at ambient 40 °C)</b>	P
	Heating appliances: 1.15 x rated input (W).....	—
	Motor-operated and combined appliances: 1.06 x rated voltage (V).....	254,4V
Leakage current between	I (mA)	Max. allowed I (mA)
Live parts and accessible parts over reinforced insulation	0,005 peak	0,35 peak
Supplementary information:		

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Clause	Requirement - Test	Result - Remark	Verdict

13.3	<b>TABLE: Electric strength</b> (at ambient 40 °C)			P
Test voltage applied between:			Voltage (V)	Breakdown (Yes/No)
Live parts and accessible parts over reinforced insulation			3000	No
Supplementary information:				

14	<b>TABLE: Transient overvoltages</b>					N/A
Clearance between:		Cl (mm)	Required Cl (mm)	Rated impulse voltage (V)	Impulse test voltage (V)	Flashover (Yes/No)
Supplementary information:						

16.2	<b>TABLE: Leakage current</b>			P
	Single phase appliances: 1.06 x rated voltage (V) .....		254,4V	—
	Three phase appliances 1.06 x rated voltage divided by $\sqrt{3}$ (V) .....		—	—
Leakage current between		I (mA)	Max. allowed I (mA)	
Live parts and accessible parts over reinforced insulation		0,006	0,25	
Supplementary information:				

16.3	<b>TABLE: Electric strength</b>			P
Test voltage applied between:			Voltage (V)	Breakdown (Yes/No)
Live parts and accessible parts over reinforced insulation			3000	No
Supplementary information:				

17	<b>TABLE: Overload protection, thermocouple measurements</b>			P
Temperature rise of part/at:			dT (K)	Max. dT (K)



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Clause	Requirement - Test	Result - Remark	Verdict
Primary winding of transformer EI57, 7,5V	Class130 (B)	81	200
Secondary winding of transformer EI57, 7,5V	Class130 (B)	37	200
Primary winding of transformer EI57, 12,5V	Class130 (B)	64	200
Secondary winding of transformer EI57, 12,5V	Class130 (B)	80	200
Primary winding of transformer EI48, 7,5V	Class130 (B)	76	200
Secondary winding of transformer EI48, 7,5V	Class130 (B)	81	200
SELV wire		55	95
Supplementary information: Thermal link operated, no hazard			

17	TABLE: Overload protection, resistance method					N/A
	Test voltage (V) .....				—	—
	Ambient, t1 (°C).....				—	—
	Ambient, t2 (°C).....				—	—
Temperature of winding		R1 (Ω)	R2 (Ω)	dT (K)	T (°C)	Max. T (°C)
Supplementary information: Thermal link operated, no hazard						

19	Abnormal operation conditions							P
Operational characteristics			YES/NO	Operational conditions				
Are there electronic circuits to control the appliance operation?			Yes					
Are there "off" or "stand-by" position?			Yes					
The unintended operation of the appliance results in dangerous malfunction?			No	Moving parts are guarded and not accessible				
Sub-clause	Operating conditions description	Test results description	PEC description	EMP 19.11.4	Software type required	19.11.3 PEC	Final result	
19.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	



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Clause	Requirement - Test				Result - Remark		Verdict
19.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.7	Lock motor	Pass	N/A	N/A	N/A	N/A	P
19.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.11.2	Fault on electronic circuit	Pass	N/A	N/A	N/A	N/A	P
19.11.4.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
19.10X	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Supplementary information:							

19.7	TABLE: Abnormal operation, locked rotor/moving parts					P
	Test voltage (V) .....			: 240		—
	Ambient, t1 (°C).....			: 24		—
	Ambient, t2 (°C).....			: 24		—
Temperature of winding		R1 (Ω)	R2 (Ω)	dT (K)	T (°C)	Max. T (°C)
Winding of fan motor Class130 (B) KRS-775STP-31120-144.2FD		-	-	-	135	225
Winding of fan motor Class130 (B) KRS-560STP-27110-127.5D		-	-	-	169	225
Winding of fan motor Class130 (B) KRS-560STP-33120-127.5D		-	-	-	165	175
Winding of fan motor Class130 (B) SH-560STP-33120-127.5D		-	-	-	167	175
Winding of fan motor Class130 (B) KRS-555STP-3856-123D		-	-	-	55	175
Winding of fan motor Class130 (B) SH-555STP-3856-123D		-	-	-	57	175
Winding of fan motor Class130 (B) KRS-555STP-		-	-	-	77	175

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Clause	Requirement - Test		Result - Remark		Verdict
3856-117D					
Winding of fan motor Class130 (B) SH-555STP-3856-117D	-	-	-	75	175
Supplementary information:					
1. For lock fan motors KRS-775STP-31120-144.2FD & KRS-560STP-27110-127.5D, operated until thermal link of the transformer operated.					
2. For lock other fan motors, operated until steady condition					

19.13	TABLE: Abnormal operation, temperature rises		P
Thermocouple locations	Max. temperature rise measured, dT (K)	Max.temperature rise limit, dT (K)	
Cl.19.7	—	—	
Test corner	13	For reference	
Enclosure	124	For Cl.30	
Cl. 19.11.2	—	—	
Enclosure	13	For Cl.30	
Winding of motor	56°C	175°C	
Pri-winding of transformer Class130 (B)	133°C	225°C	
Sec-winding of transformer Class130 (B)	129°C	225°C	
Test corner	3	For reference	
Cl.19.B.101 of Annex B	—	—	
Test corner	19	For reference	
Enclosure	8	For Cl.30	
Cl.19.I.101 of Annex I	—	—	
Test corner	2	For reference	
Enclosure	11	For Cl.30	
Supplementary information:			

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Clause	Requirement - Test	Result - Remark	Verdict
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24.1	<b>TABLE: Components information</b>					P
Object / part No.		Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1)</sup>
Plug		Dongguan Changqi Electronics Co., Ltd	CQ-013	2,5A, 250V~	VDE 0620-1 IEC 60884	VDE 40015914
Alt.		Zhongshan Xiaolan Qiangli Electric Factory Co., Ltd.	QL-VA1	2,5A, 250V~	VDE 0620-1 IEC 60884	VDE 40013545
Alt.		Interchangeable	Interchangeable	2,5A, 250V~	VDE 0620-1	VDE
UK Plug		Shenzhen Bao'an Xixiang Changxiao Electric Manufacture Factory	CWL668	13A, 250V~	BS1363-1	BSI KM82901
Alt.		Zhong Shan Qiang Li Electrical Factory Co., Ltd.	QL-340	13A, 250V~	BS1363-1	ASTA LICENCE NO. 735
Alt.		Interchangeable	Interchangeable	13A, 250V~	BS1363-1	BSI
Supply cord		Dongguan Changqi Electronics Co., Ltd	H03VVH2-F H05VVH2-F	2x0,75mm <sup>2</sup>	DIN VDE 0281-5 HD 21.5 S3 60227 IEC 52/53	VDE 40011173
Alt.		Zhongshan Xiaolan Qiangli Electric Factory Co., Ltd.	H03VVH2-F H05VVH2-F	2x0,75mm <sup>2</sup>	DIN VDE 0281-5 HD 21.5 S3 60227 IEC 52/53	VDE 109832
Alt.		Interchangeable	H03VVH2-F H05VVH2-F	2x0,75mm <sup>2</sup>	DIN VDE 0281-5 HD 21.5 S3 60227 IEC 52/53	VDE
DC inlet		KEXIN Electronic factory	DC-0053	DC 30V, 0,3A	IEC 60335-2-80	Tested in the appliance
Appliance inlet		ZHE JIANG BEI ER JIA ELECTRONIC CO.LTD	ST-A03-002 ST-A03-005	250V 2,5A	IEC/EN 60320-1	VDE 40014833
Appliance connector		Dongguan Changqi Electronics Co., Ltd	CQ-017	250V 2,5A	IEC/EN 60320-1	VDE 40016842

IEC 60335-2-80					
Clause	Requirement - Test		Result - Remark	Verdict	
Alt.	Interchangeable	Interchangeable	250V 2,5A	IEC/EN 60320-1	VDE
Fan motor for KN-2918HR KN-2918H only	Rock Motor(shenzhen) Co., Ltd.	KRS-775STP-31120-144.2FD	DC 12V 1,7A Class 130 (B)	IEC 60335-2-80	Tested in the appliance
Fan motor for KN-2916HR KN-2914HR KN-2916H KN-2914H KN-2916 KN-2914	Rock Motor(shenzhen) Co., Ltd.	KRS-560STP-33120-127.5D	DC 6V 1,75A Class 130 (B)	IEC 60335-2-80	Tested in the appliance
Alt.	Dongguan Best-Fit Electric Co., Ltd.	SH-560STP-33120-127.5D	DC 6V 1,58A Class 130 (B)	IEC 60335-2-80	Tested in the appliance
Fan motor for KN-2926 KN-2924 KN-2926H KN-2926HR	Rock Motor(shenzhen) Co., Ltd.	KRS-560STP-27110-127.5D	DC 12V 1,3A Class 130 (B)	IEC 60335-2-80	Tested in the appliance
Fan motor for KN-2912	Rock Motor(shenzhen) Co., Ltd.	KRS-550STP-35112-123D	DC 6V 1,2A Class 130 (B)	IEC 60335-2-80	Tested in the appliance
Alt.	Dongguan Best-Fit Electric Co., Ltd.	SH-550STP-35112-123D	DC 6V 1,83A Class 130 (B)	IEC 60335-2-80	Tested in the appliance
Fan motor for KN-2712	Rock Motor(shenzhen) Co., Ltd.	KRS-555STP-3856-117D	DC 6V 1,3A Class 130 (B)	IEC 60335-2-80	Tested in the appliance
Alt.	Dongguan Best-Fit Electric Co., Ltd.	SH-555STP-3856-117D	DC 6V 1,83A Class 130 (B)	IEC 60335-2-80	Tested in the appliance
Fan motor for KN-2905	Rock Motor(shenzhen) Co., Ltd.	KN-2905M	DC 4,2V 0,34A Class 130 (B)	IEC 60335-2-80	Tested in the appliance
Fan motor for KN-2903	Rock Motor(shenzhen) Co., Ltd.	KN-2903M	DC 4,2V 0,22A Class 130 (B)	IEC 60335-2-80	Tested in the appliance
Transformer for KN-2914HR KN-2916HR KN-2914 KN-2916 KN-2914H KN-2916H only	Kennele Electronics MFG. Co., Ltd.	EI57	I/P: 220-240V~ 50/60Hz O/P: 7,5V~ 2,5A Class 130 (B)	IEC 60335-2-80	Tested in the appliance



IEC 60335-2-80					
Clause	Requirement - Test		Result - Remark		Verdict
-Bobbin	Chang Chun Plastics Co Ltd	T375J	V-0	IEC 60335-2-80	Tested in the appliance/ UL E59481
-Alt.	Chang Chun Plastics Co Ltd	4115 (a)	V-0	IEC 60335-2-80	Tested in the appliance/ UL E59481
-Alt.	E I DUPONT DE NEMOURS & CO INC	FR50(+)(f1)	V-0	IEC 60335-2-80	Tested in the appliance/ UL E41938
-Thermal link	Aupo Electronics Ltd.	A4	2A, 250V~, Tf 130°C	IEC/EN 60691	Tested in the appliance/ VDE 40008720
Transformer for KN-2712 KN-2912 only	Kennede Electronics MFG. Co., Ltd.	EI48	I/P: 220-240V~ 50/60Hz O/P: 7,5V~ 1,9A Class 130 (B)	IEC 60335-2-80	Test in the with appliance
-Bobbin	Chang Chun Plastics Co Ltd	T375J	V-0	IEC 60335-2-80	Tested in the appliance/ UL E59481
-Alt.	Chang Chun Plastics Co Ltd	4115 (a)	V-0	IEC 60335-2-80	Tested in the appliance/ UL E59481
-Alt.	E I DUPONT DE NEMOURS & CO INC	FR50(+)(f1)	V-0	IEC 60335-2-80	Tested in the appliance/ UL E41938
-Thermal link	Aupo Electronics Ltd.	A4	2A, 250V~, Tf 130°C	IEC/EN 60691	Tested in the appliance/ VDE 40008720
Transformer for KN-2924 KN-2926 KN-2918H KN-2926H KN-2926HR KN-2918HR only	Kennede Electronics MFG. Co., Ltd.	EI57	I/P:220-240V~ 50/60Hz O/P:12,5V~ 1,5A Class 130 (B)	IEC 60335-2-80	Test with appliance



IEC 60335-2-80					
Clause	Requirement - Test		Result - Remark		Verdict
-Bobbin	Chang Chun Plastics Co Ltd	T375J	V-0	IEC 60335-2-80	Tested in the appliance/ UL E59481
-Alt.	Chang Chun Plastics Co Ltd	4115 (a)	V-0	IEC 60335-2-80	Tested in the appliance/ UL E59481
-Alt.	E I DUPONT DE NEMOURS & CO INC	FR50(+)(f1)	V-0	IEC 60335-2-80	Tested in the appliance/ UL E41938
-Thermal link	Aupo Electronics Ltd.	A4	2A, 250V~, Tf 130°C	IEC/EN 60691	Tested in the appliance/ VDE 40008720
Internal wire	Jiang Men Jia Chuan Electric & Cable Co LTD	1007	300V~, 18-26AWG T80	IEC 60335-2-80	Tested in the appliance UL E315723
Alt.	ZHONG SHAN YONG ROI ELECTRIC FACTORY CO LTD	1007	300V~, 18-26AWG T80	IEC 60335-2-80	Tested in the appliance UL E204893
Alt.	Jiang Men Jia Chuan Electric & Cable Co LTD	1015	600V~, 18-26AWG T105	IEC 60335-2-80	Tested in the appliance UL E315723
Alt.	ZHONG SHAN YONG ROI ELECTRIC FACTORY CO LTD	1015	600V~, 18-26AWG T105	IEC 60335-2-80	Tested in the appliance UL E204893
Motor lead wire	Jiang Men Jia Chuan Electric & Cable Co LTD	1015 / 1007 / 2464	600V / 300V~, 18-26AWG T80	IEC 60335-2-80	Tested in the appliance UL E315723
Alt.	ZHONG SHAN YONG ROI ELECTRIC FACTORY CO LTD	1015 / 1007 / 2464	600V / 300V~, 18-26AWG T80	IEC 60335-2-80	Tested in the appliance UL E204893



IEC 60335-2-80					
Clause	Requirement - Test		Result - Remark		Verdict
Plastic material for enclosure, base, switch/control button	Chi Mei Corporation	PA-764 (+)	ABS ,V-0 Thickness of enclosure: 2,1 mm	IEC 60335-2-80	Tested in appliance UL E56070
Heat shrinkable tube (KN-2903, KN-2905 for internal wires, other models for motor leader wires only)	Shenzhen Woer Heat-Shrinkable Material Co., Ltd.	RSFR-H	600V T125	IEC 60335-2-80	Tested in appliance UL E203950
Alt.	DONGGUAN SALIPT CO LTD	SALIPT S-901-600	600V T125	IEC 60335-2-80	Tested in appliance UL E209436
Holder for wire connector (except for KN-2903)	FOSHAN SHUNDE KENDA ELECTRICAL FACTOTY	CT-2	3A	IEC 60335-2-80	Tested in appliance/
PCB	Jiang Men Chang Ming PCB Factory	CM-1	V-0	IEC 60335-2-80	Tested in appliance UL E232206
Holder of fan motor	Petrochina Company Limited	0215F	ABS ,V-0	IEC 60335-2-80	Tested in appliance UL E243093
Current fuse for KN-2903 & KN-2905 only	Shenzhen Lanson Electronics Co. Ltd.	3K T1A250V	1A, 250V	IEC 60127-1	VDE 40010682
Alt.	Dongguan Better Electronic Technology Co., Ltd.	334-Series(s)	1A, 250V	IEC 60127-1	VDE 40025428
Switch for model KN-2903	KEXIN	SS22F25G7	DC 50V 0,3A	IEC 60335-2-80	Tested in appliance
Switch for model KN-2905	KEXIN	SS22F25G9	DC 50V 0,3A	IEC 60335-2-80	Tested in appliance
Switches for models KN-2926H, KN-2918H, KN-2926, KN-2924, KN-2916H, KN-2914H, KN-2916, KN-2914, KN-2912, KN-2712	HENG MEI ELECTRONICS CO., LTD.	SS43D015GB 5	DC 50V 0,3A	IEC 60335-2-80	Tested in appliance



IEC 60335-2-80					
Clause	Requirement - Test		Result - Remark		Verdict
Battery for KN-2926HR, KN-2918HR, KN-2926H, KN-2918H, KN-2926, KN-2924	Chee Yuen Plastic Product (Huizhou) Co.Ltd.	RB1245B	12V/4,5Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Alt.	Kennede Electronics MFG. Co., Ltd.	RB1245B	12V/4,5Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Battery for KN-2916HR, KN-2914HR, KN-2916H, KN-2914H, KN-2916, KN-2914	Chee Yuen Plastic Product (Huizhou) Co.Ltd.	RB670B	6V/7Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Alt.	Kennede Electronics MFG. Co., Ltd.	RB670B	6V/7Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Battery for KN-2912, KN-2712	Chee Yuen Plastic Product (Huizhou) Co.Ltd.	RB645B	6V/4,5Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Alt.	Kennede Electronics MFG. Co., Ltd.	RB645B	6V/4,5Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Battery for KN-2905	Chee Yuen Plastic Product (Huizhou) Co.Ltd.	RB416B	4V/1,6Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Alt.	Kennede Electronics MFG. Co., Ltd.	RB416B	4V/1,6Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Battery for KN-2903	Chee Yuen Plastic Product (Huizhou) Co.Ltd.	RB409B	4V/0,9Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Alt.	Kennede Electronics MFG. Co., Ltd.	RB409B	4V/0,9Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Weak part (other fuse)	Zhongshan Sanhe Electronic Co., Ltd	2F	AC250V, 3A	IEC 60335-2-80	Tested in appliance
Lamp cover	CHI MEI CORPORATION	PG-33	PS, HB	IEC 60335-2-80	Tested in appliance UL E56070

IEC 60335-2-80			
Clause	Requirement - Test	Result - Remark	Verdict

Supplementary information:

<sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039.

28.1	<b>TABLE: Threaded part torque test</b>				N/A
Threaded part identification	Diameter of thread (mm)	Column number (I, II, or III)	Applied torque (Nm)		

Supplementary information:

29.1	<b>TABLE: Clearances</b>						P
	Overvoltage category..... : ..	II	Type of insulation:			—	—
Rated impulse voltage (V):	Min. cl (mm)	Basic (mm)	Supplementary (mm)	Reinforced (mm)	Functional (mm)	Verdict / Remark	
330	0,2* / 0,5 / 0,8**						
500	0,2* / 0,5 / 0,8**						
800	0,2* / 0,5 / 0,8**						
1 500	0,5 / 0,8** / 1,0***						
2 500	<u>1,5 / 2,0***</u>	>13,9	3,7	—	>3,2	P	
4 000	<u>3,0 / 3,5***</u>	—	—	>12,0	—	P	
6 000	5,5 / 6,0***						
8 000	8,0 / 8,5***						
10 000	11,0 / 11,5***						

Supplementary information:

\* ) For tracks on printed circuit boards if pollution degree 1 and 2  
 \*\* ) For pollution degree 3  
 \*\*\* ) If the construction is affected by wear, distortion, movement of the parts or during assembly

29.2	<b>TABLE: Creepage distances, basic, supplementary and reinforced insulation</b>				P
Working voltage (V)	Creepage distance (mm) Pollution degree				
	1	2	3	Type of insulation	

## IEC 60335-2-80

Clause	Requirement - Test					Result - Remark				Verdict
	Material group		Material group		(mm)					
	I	II	IIIa/IIIb	I	II	IIIa/IIIb*)	B**) S**) R**)			
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9	—	—	
≤50	0,18	0,6	0,85	1,2	1,5	1,7	1,9	—	—	
≤50	0,36	1,2	1,7	2,4	3,0	3,4	3,8	—	—	
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4	—	—	
125	0,28	0,75	1,05	1,5	1,9	2,1	2,4	—	—	
125	0,56	1,5	2,1	3,0	3,8	4,2	4,8	—	—	
250	0,56	1,25	1,8	2,5	3,2	3,6	<u>4,0</u>	>18, 9	—	
250	0,56	1,25	1,8	2,5	3,2	3,6	<u>4,0</u>	—	4,5	
250	1,12	2,5	3,6	5,0	6,4	7,2	<u>8,0</u>	—	>13, 5	
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—	—	
400	1,0	2,0	2,8	4,0	5,0	5,6	6,3	—	—	
400	2,0	4,0	5,6	8,0	10,0	11,2	12,6	—	—	
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	—	—	
500	1,3	2,5	3,6	5,0	6,3	7,1	8,0	—	—	
500	2,6	5,0	7,2	10,0	12,6	14,2	16,0	—	—	
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	—	—	
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	—	—	
>630 and ≤800	3,6	6,4	9,0	12,6	16,0	18,0	20,0	—	—	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	—	—	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	—	—	
>800 and ≤1000	4,8	8,0	11,2	16,0	20,0	22,0	25,0	—	—	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	—	—	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	—	—	
>1000 and ≤1250	6,4	10,0	14,2	20,0	25,0	28,0	32,0	—	—	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	—	—	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	—	—	
>1250 and ≤1600	8,4	12,6	18,0	25,0	32,0	36,0	40,0	—	—	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	—	—	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	—	—	

IEC 60335-2-80										
Clause	Requirement - Test						Result - Remark			Verdict
>1600 and ≤2000	11,2	16,0	22,0	32,0	40,0	44,0	50,0	—	—	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	—	—	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	—	—	
>2000 and ≤2500	15,0	20,0	28,0	40,0	50,0	56,0	64,0	—	—	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	—	—	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	—	—	
>2500 and ≤3200	20,0	25,0	36,0	50,0	64,0	72,0	80,0	—	—	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	—	—	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	—	—	
>3200 and ≤4000	25,0	32,0	44,0	64,0	80,0	90,0	100,0	—	—	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	—	—	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	—	—	
>4000 and ≤5000	32,0	40,0	56,0	80,0	100,0	112,0	126,0	—	—	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	—	—	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	—	—	
>5000 and ≤6300	40,0	50,0	72,0	100,0	126,0	142,0	160,0	—	—	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	—	—	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	—	—	
>6300 and ≤8000	50,0	64,0	90,0	126,0	160,0	180,0	200,0	—	—	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	—	—	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	—	—	
>8000 and ≤10000	64,0	80,0	112,0	160,0	200,0	220,0	250,0	—	—	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	—	—	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	—	—	
>10000 and ≤12500	80,0	100,0	142,0	200,0	250,0	280,0	320,0	—	—	

Supplementary information:

\*<sup>)</sup> Material group IIIb is allowed if the working voltage does not exceed 50 V  
\*\*<sup>)</sup> B = Basic insulation, S = Supplementary insulation, R = Reinforced insulation

29.2	TABLE: Creepage distances, functional insulation						P
Working voltage (V)	Creepage distance (mm) Pollution degree						
	1	2		3			

## IEC 60335-2-80

Clause	Requirement - Test					Result - Remark		Verdict
		Material group			I	Material group		
		I	II	IIIa/IIIb	I	II	IIIa/IIIb*)	Verdict / Remark
≤10	0,08	0,4	0,4	0,4	1,0	1,0	1,0	
50	0,16	0,56	0,8	1,0	1,4	1,6	1,8	
125	0,25	0,71	1,0	1,4	1,8	2,0	2,2	
250	0,42	1,0	1,4	2,0	2,5	2,8	<u>3,2</u>	P / 3,21mm
400	0,75	1,6	2,2	3,2	4,0	4,5	5,0	
500	1,0	2,0	2,8	4,0	5,0	5,6	6,3	
>630 and ≤800	1,8	3,2	4,5	6,3	8,0	9,0	10,0	
>800 and ≤1000	2,4	4,0	5,6	8,0	10,0	11,0	12,5	
>1000 and ≤1250	3,2	5,0	7,1	10,0	12,5	14,0	16,0	
>1250 and ≤1600	4,2	6,3	9,0	12,5	16,0	18,0	20,0	
>1600 and ≤2000	5,6	8,0	11,0	16,0	20,0	22,0	25,0	
>2000 and ≤2500	7,5	10,0	14,0	20,0	25,0	28,0	32,0	
>2500 and ≤3200	10,0	12,5	18,0	25,0	32,0	36,0	40,0	
>3200 and ≤4000	12,5	16,0	22,0	32,0	40,0	45,0	50,0	
>4000 and ≤5000	16,0	20,0	28,0	40,0	50,0	56,0	63,0	
>5000 and ≤6300	20,0	25,0	36,0	50,0	63,0	71,0	80,0	
>6300 and ≤8000	25,0	32,0	45,0	63,0	80,0	90,0	100,0	
>8000 and ≤10000	32,0	40,0	56,0	80,0	100,0	110,0	125,0	
>10000 and ≤12500	40,0	50,0	71,0	100,0	125,0	140,0	160,0	

Supplementary information:  
 \*) Material group IIIb is allowed if the working voltage does not exceed 50 V



## IEC 60335-2-80

Clause	Requirement - Test										Result - Remark					Verdict
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30	TABLE: Resistance to heat and fire															Needle - flame test (NFT)	Verdict	
	Object/ part No.	Manufacturer / trademark	Type/ model	Ball pressure test °C (mm) with limit 2,0 mm				Glow wire test (GWT) °C				Glow-wire flammability index (GWFI) °C						
				75	125	cl. 11 +40	cl. 19 +25	550	650	750	850	550	650	750	850	675	775	
				te	ti	te	ti											
Plastic material for enclosure, base, Switch button	Chi Mei Corporation	PA-764 (+)	—	1,2	—	—	—	—	—	0	0	P	—	—	—	—	—	P
Holder of fan motor	Petrochina Company Limited	0215F	—	—	1,6m m, 97°C	—	P	—	—	—	—	—	—	—	—	—	—	P
Bobbin of transformer	Chang Chun Plastics Co Ltd	T375J	—	1,2	—	—	—	—	—	0	0	P	—	—	—	—	—	P
Alt.	Chang Chun Plastics Co Ltd	4115 (a)	—	1,2	—	—	—	—	—	0	0	P	—	—	—	—	—	P
Alt.	E I DUPONT DE	FR50(+(f1)	—	1,2	—	—	—	—	—	0	0	P	—	—	—	—	—	P

TRF No. IEC60335\_2\_80E



IEC 60335-2-80																	
Clause			Requirement - Test										Result - Remark				Verdict
	NEMOURS & CO INC																
PCB	Jiang Men Chang Ming Pcb Factory	CM-1	—	0,8	—	—	—	—	—	0	0	P	—	—	—	—	P
Holder for wire connector	FOSHAN SHUNDE KENDA ELECTRICAL FACTOTY	CT-2	—	1,6	—	—	—	—	—	0	0	P	—	—	—	—	P
Lamp cover	CHI MEI CORPORATION	PG-33	1,3	—	—	—	P	—	—	—	—	—	—	—	—	—	P
Supplementary information:																	
1) Parts of material classified at least HB40 or if relevant HBF																	
2) Parts of material classified as V-0 or V-1																	
3) Flame persisting longer than 2 s (= $t_e - t_i$ ) need only be reported for unattended appliances																	
4) Surrounding parts subjected to the needle-flame test of annex E																	
5) Base material classified as V-0 or if relevant VTM-0																	
6) The GWIT pre-selection option, the 850 °C GWFI pre-selection option, and the 850 °C GWT are not applicable for attended appliances																	

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

**Attachment: Photos**

Overview of model KN-2926



Internal view of model KN-2926

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Appliance inlet



DC inlet on the control panel

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

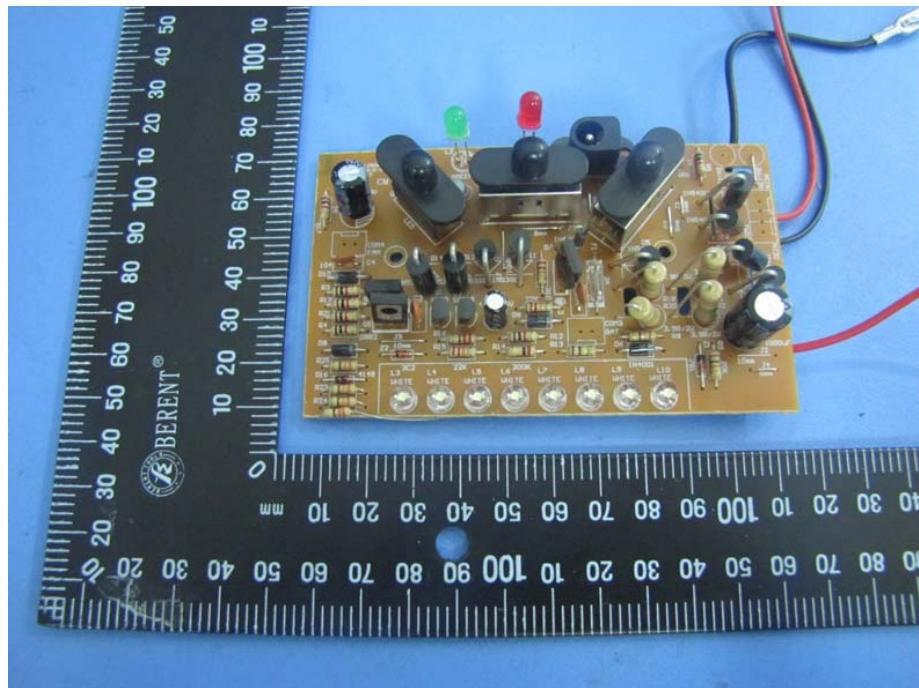


Motor of model KN-2926

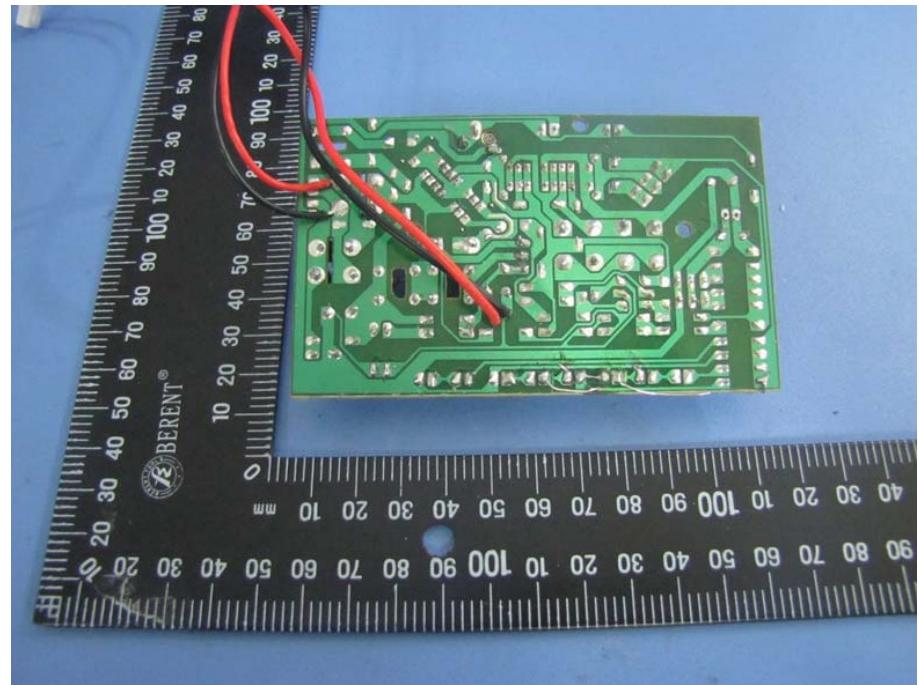


Control panel of model KN-2926

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

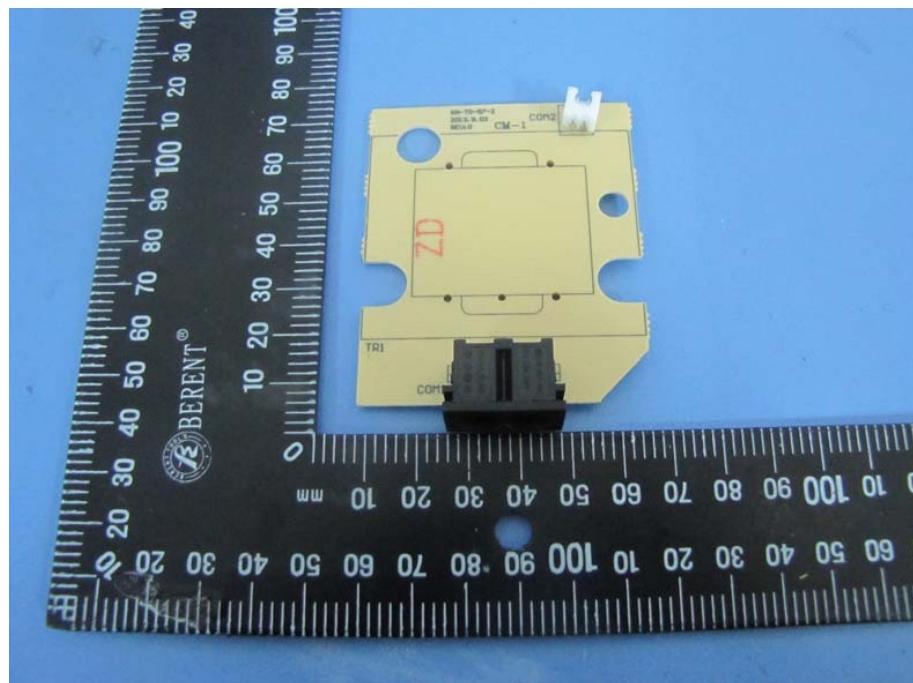


Front control PCB of model KN-2926

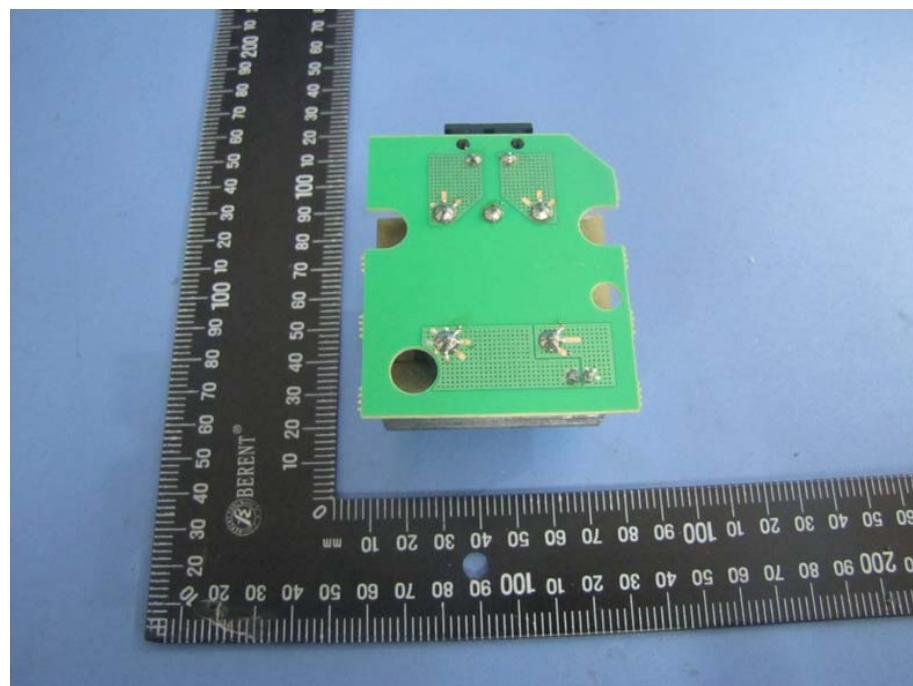


Back control PCB of model KN-2926

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

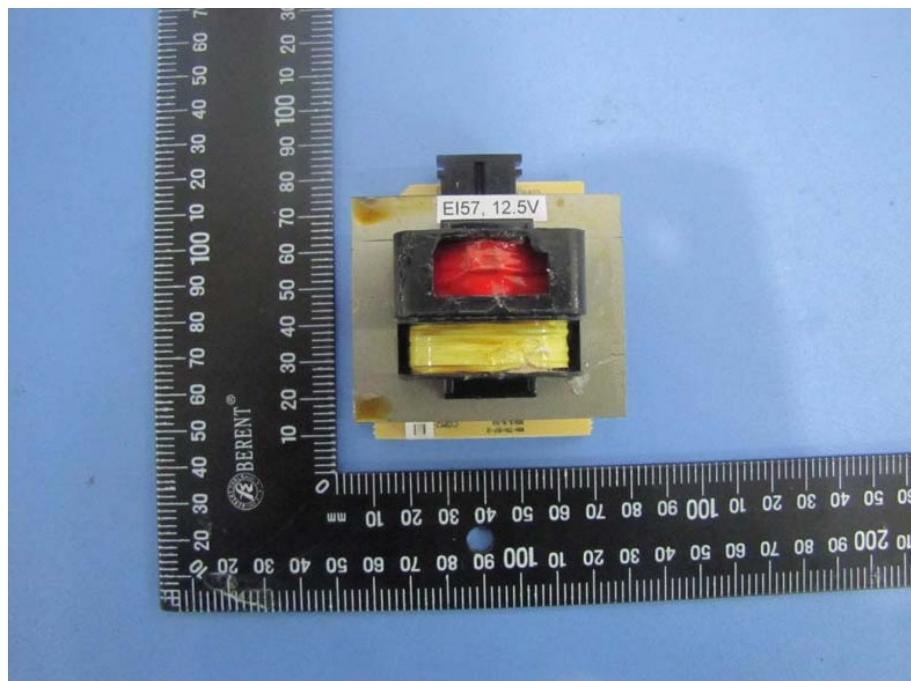


Front power PCB of model KN-2926

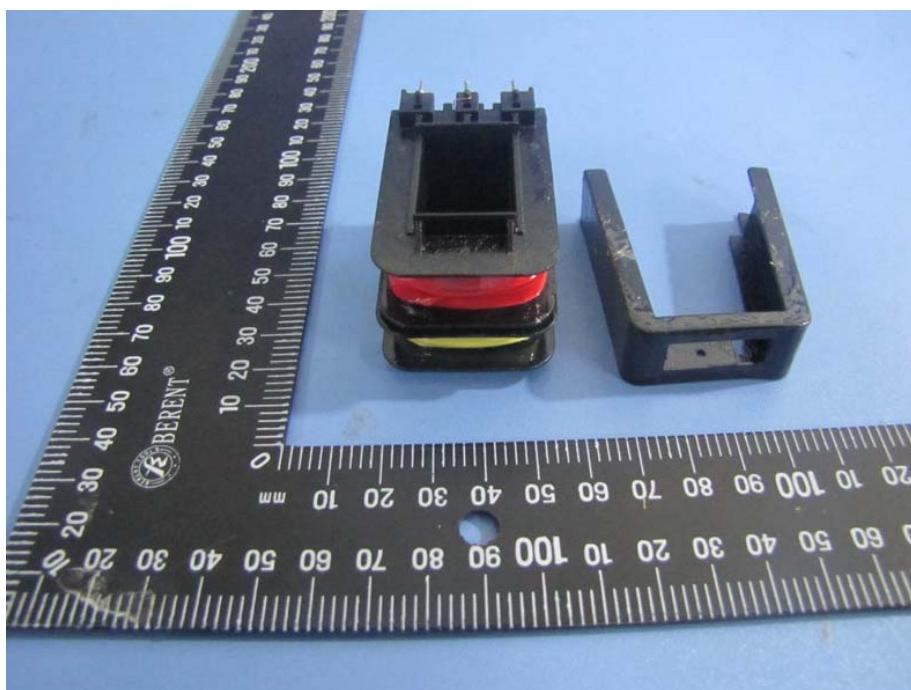


Back power PCB of model KN-2926

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Overview of transformer on model KN-2926



Overview of transformer on model KN-2926

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Internal view of transformer on model KN-2926



Thermal fuse on transformer on model KN-2926

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Overview of model KN-2712

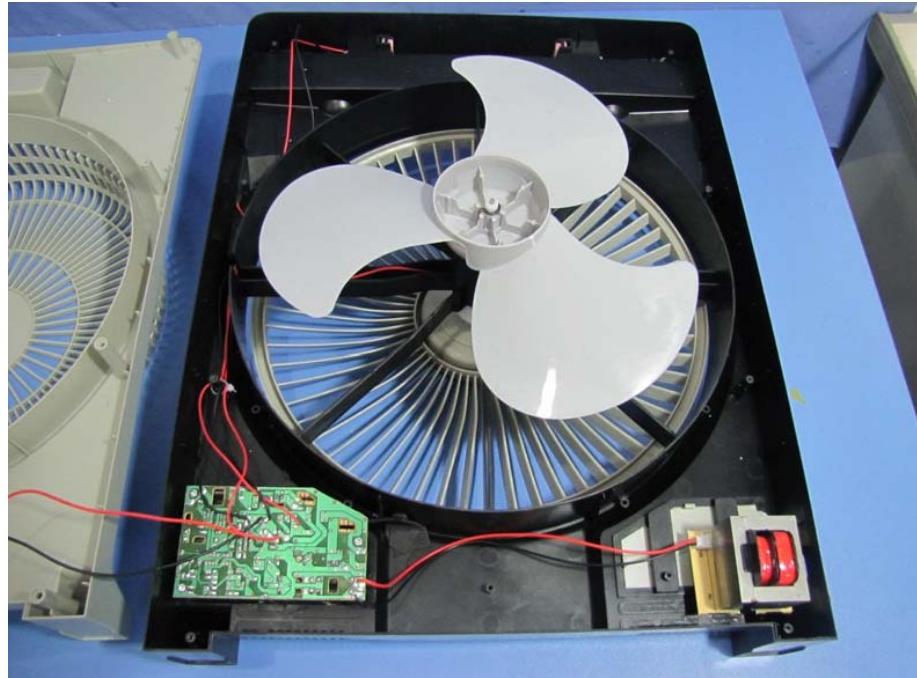


Control panel of model KN-2712

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

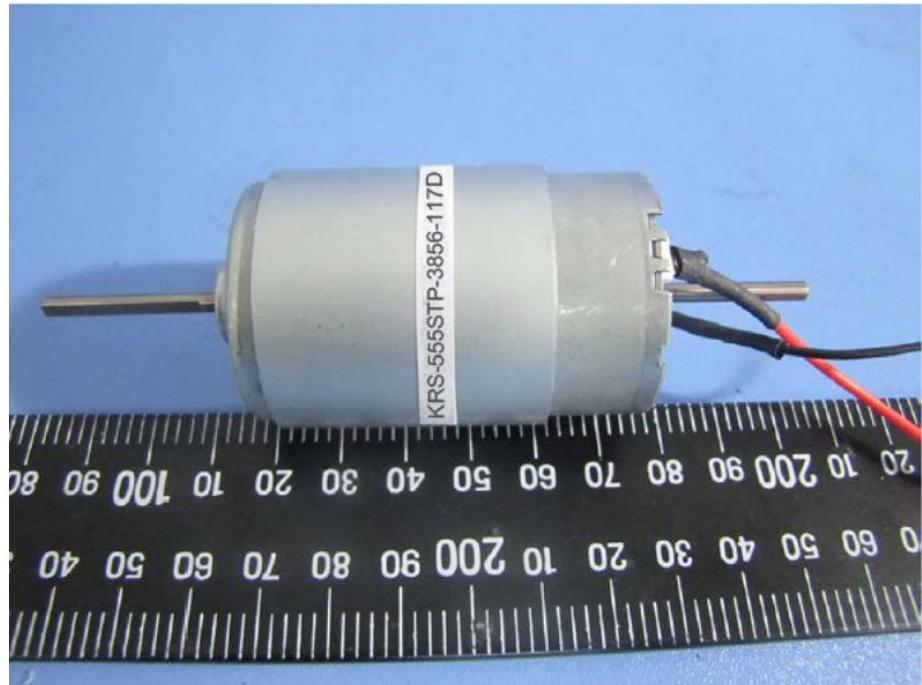


Internal view of model KN-2712

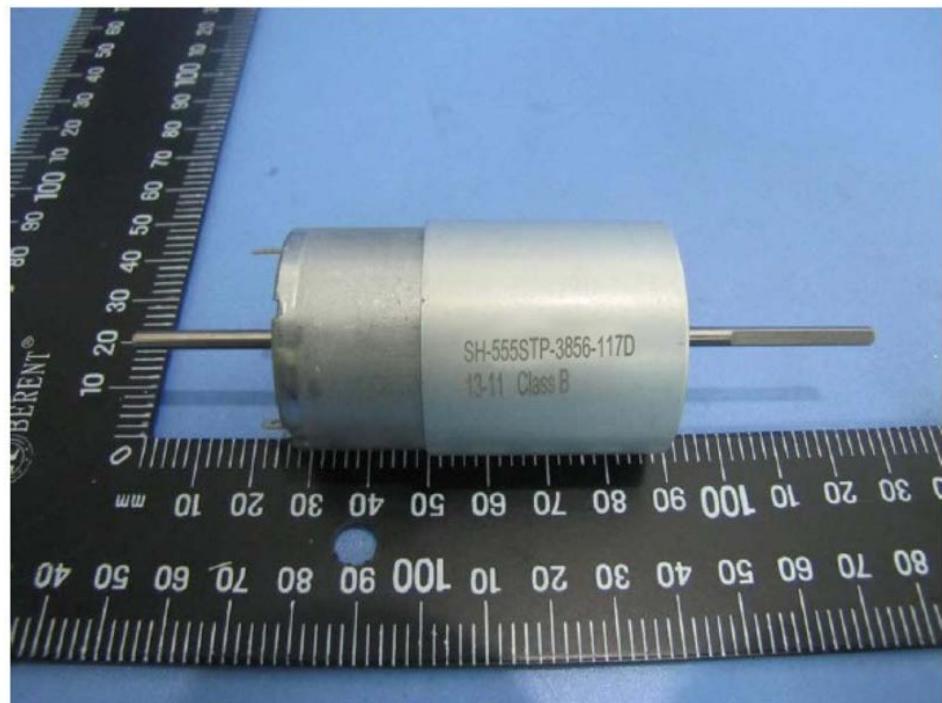


Internal view of model KN-2712

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

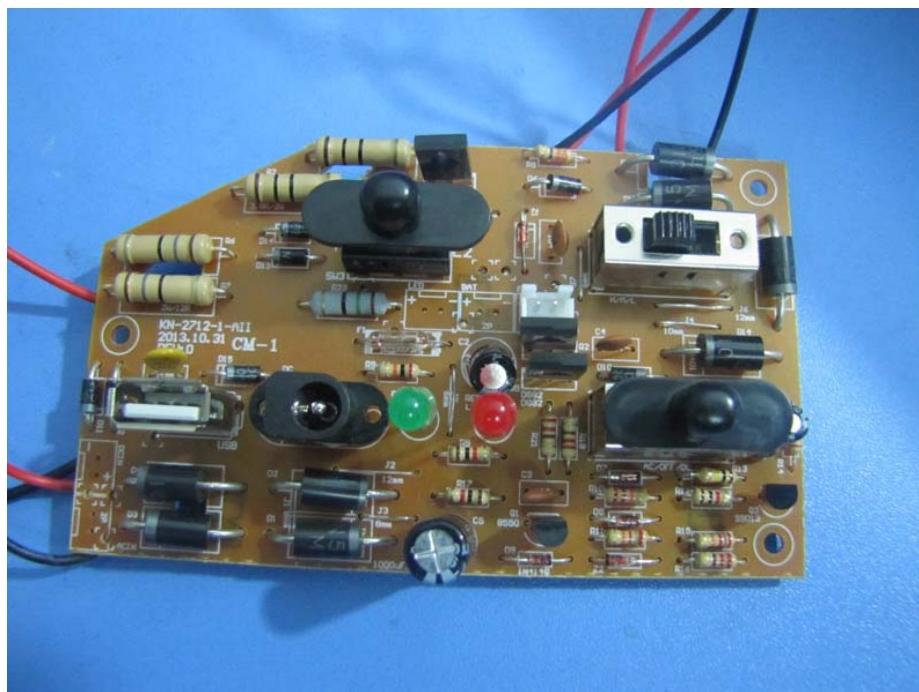


Motor of model KN-2712 (model KRS-555STP-3856-117D)

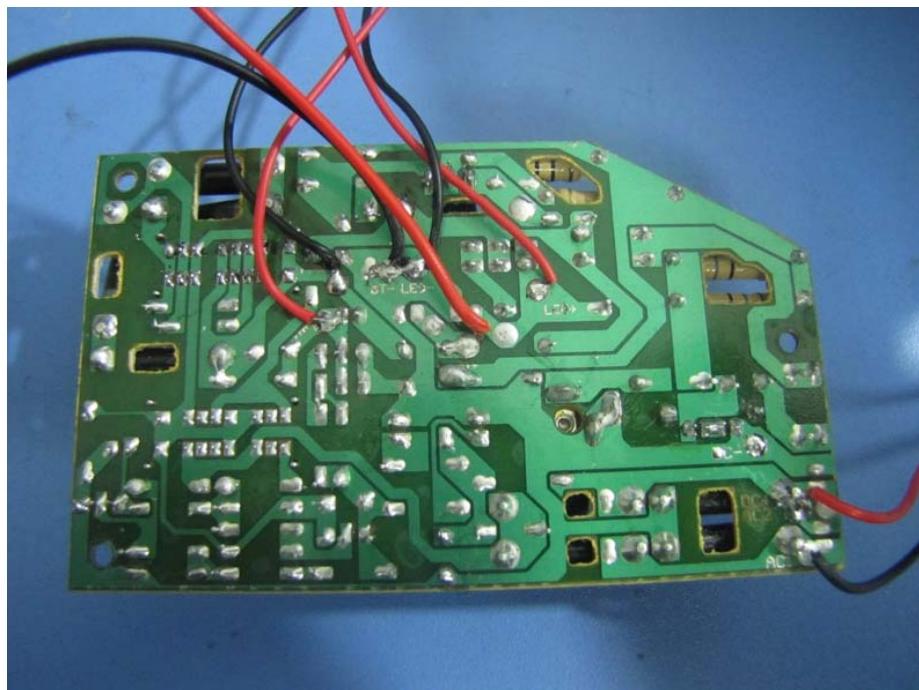


Motor of model KN-2712 (model SH-555STP-3856-117D)

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

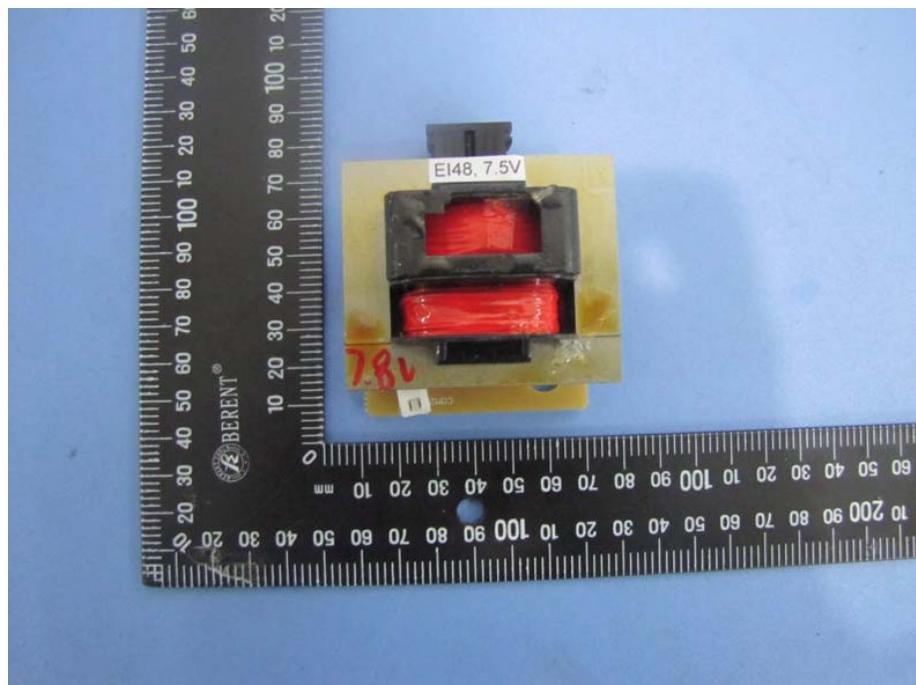


Front power PCB of model KN-2712

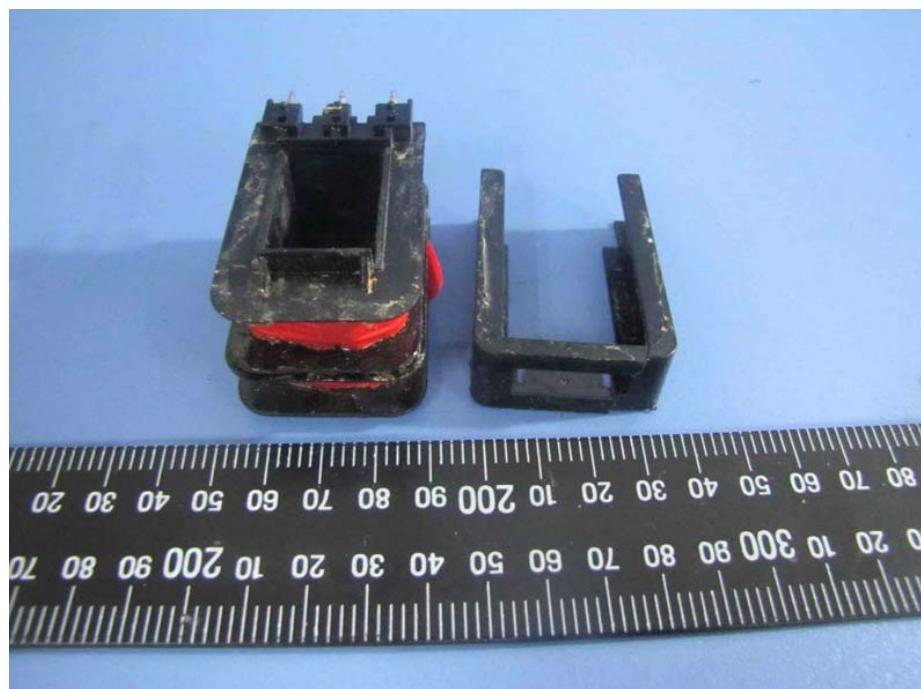


Back power PCB of model KN-2712

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Overview of transformer on model KN-2712



Internal view of transformer on model KN-2712

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Internal view of transformer (bobbin) on model KN-2712



Thermal fuse on transformer on model KN-2712

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

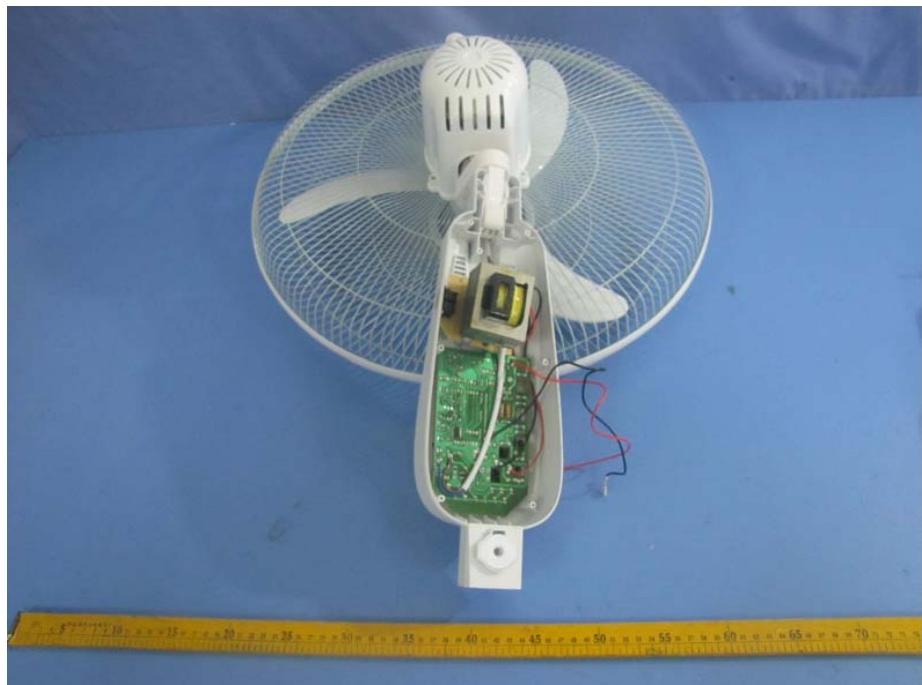


Overview of model KN-2918HR

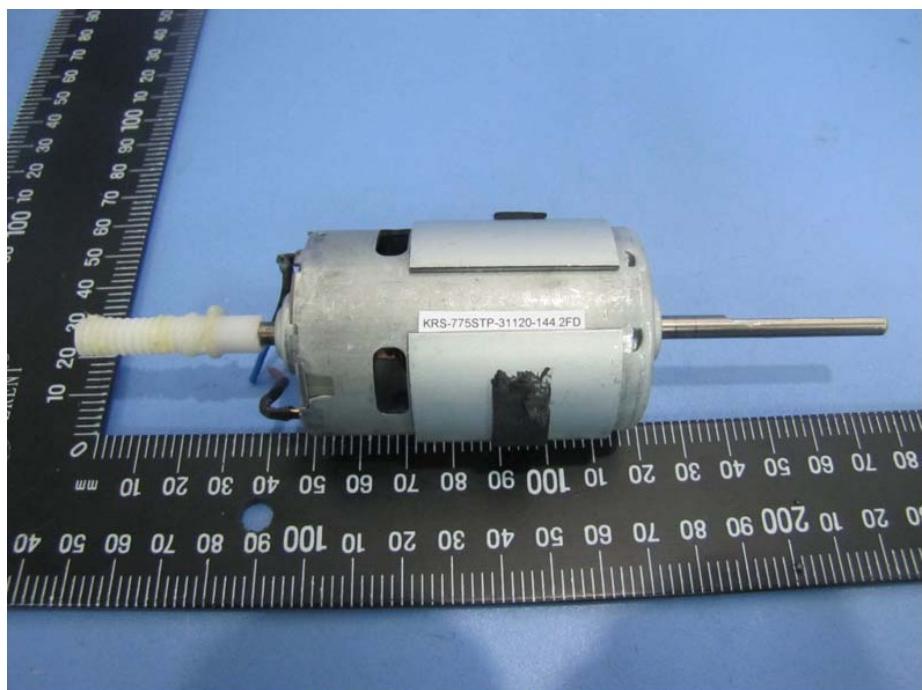


Internal view of model KN-2918HR

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Internal view of model KN-2918HR

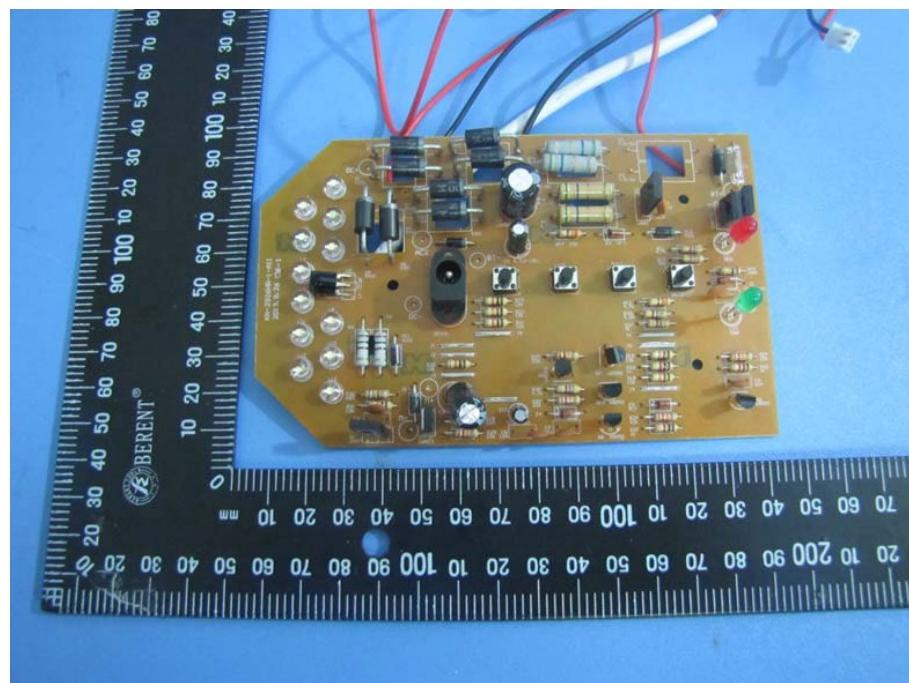


Motor of model KN-2918HR

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

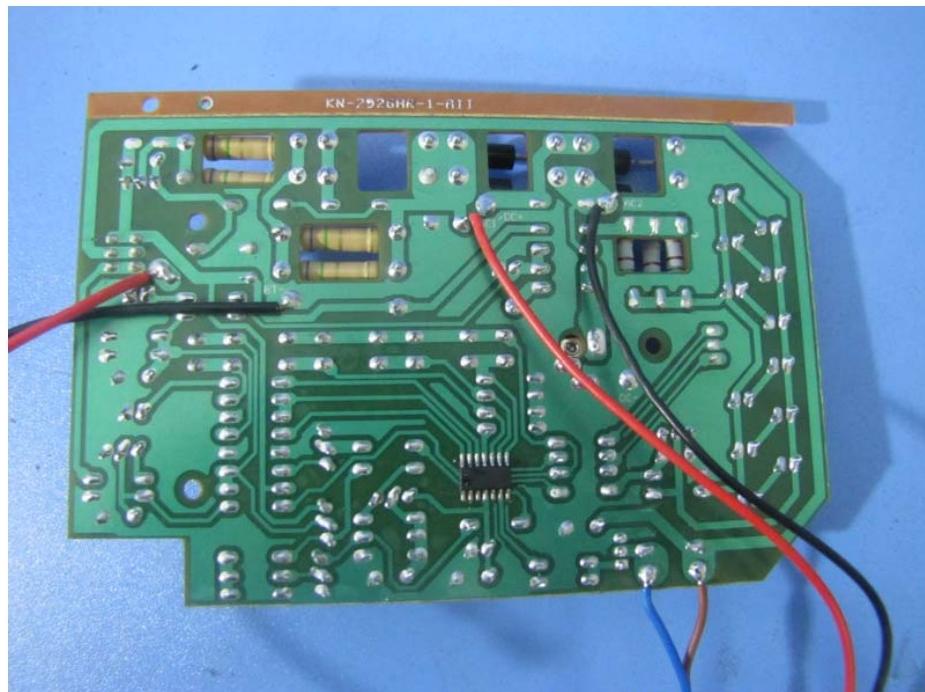


Control panel of model KN-2918HR

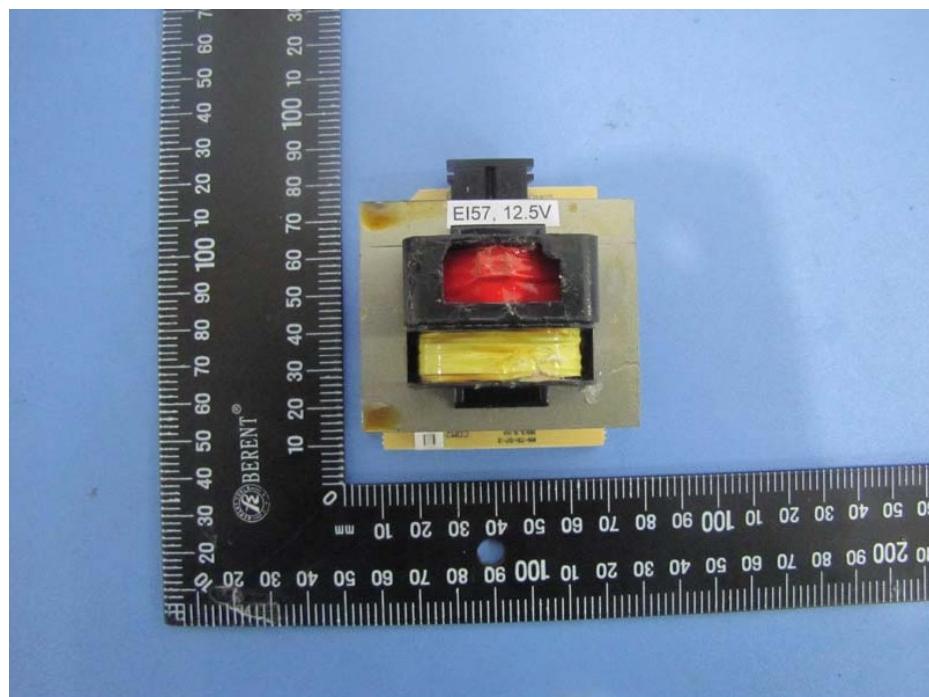


Front power PCB of model KN-2918HR

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

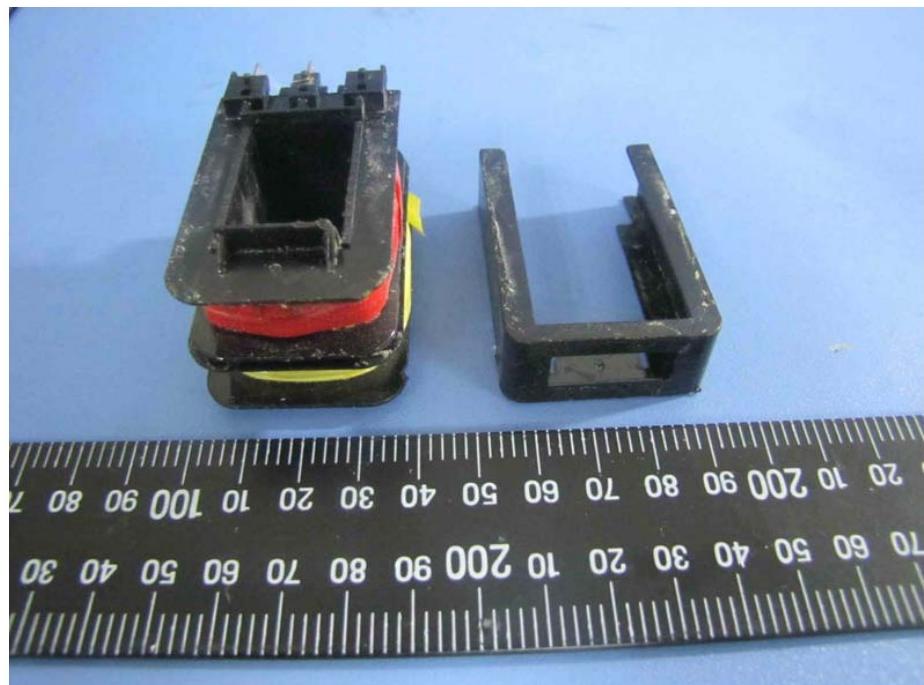


Front power PCB of model KN-2918HR



Overview of transformer on model KN-2918HR

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Overview of transformer on model KN-2918HR



Internal view of transformer (bobbin) on model 2918HR

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



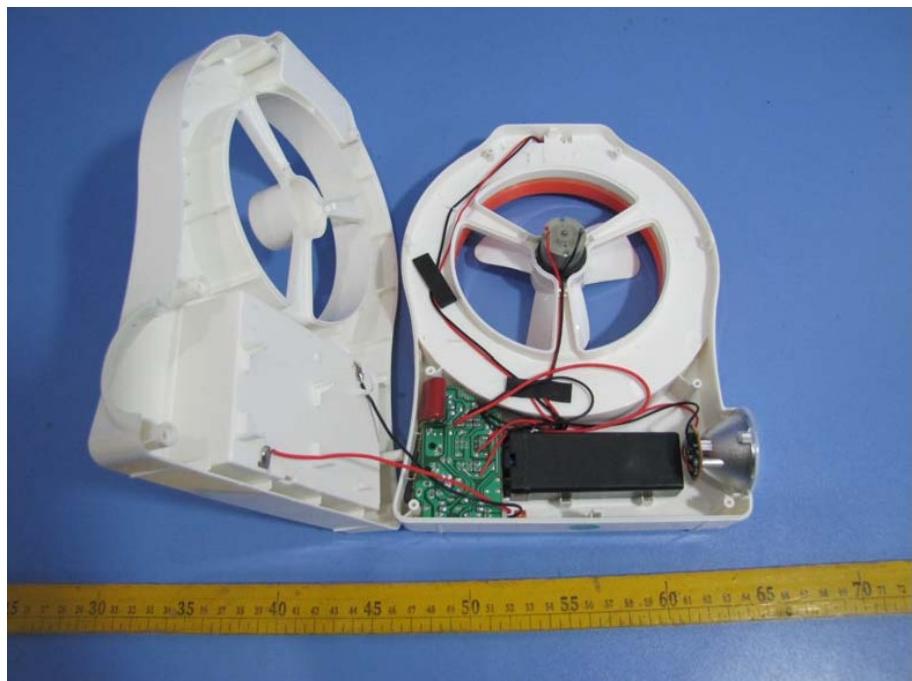
Thermal fuse on transformer on model 2918HR



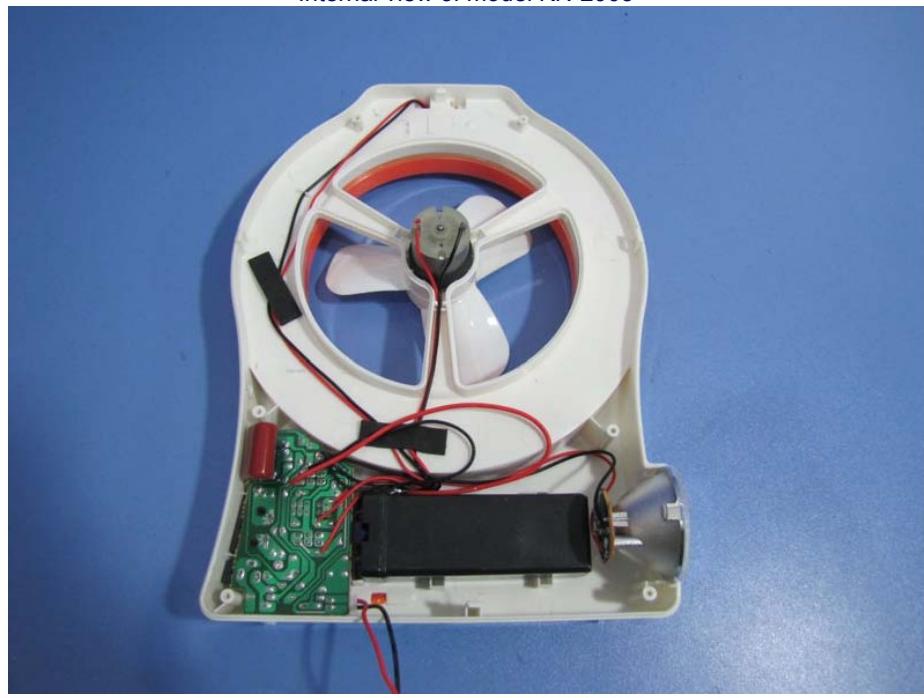
Overview of model KN-2905

TRF No. IEC60335\_2\_80E

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Internal view of model KN-2905

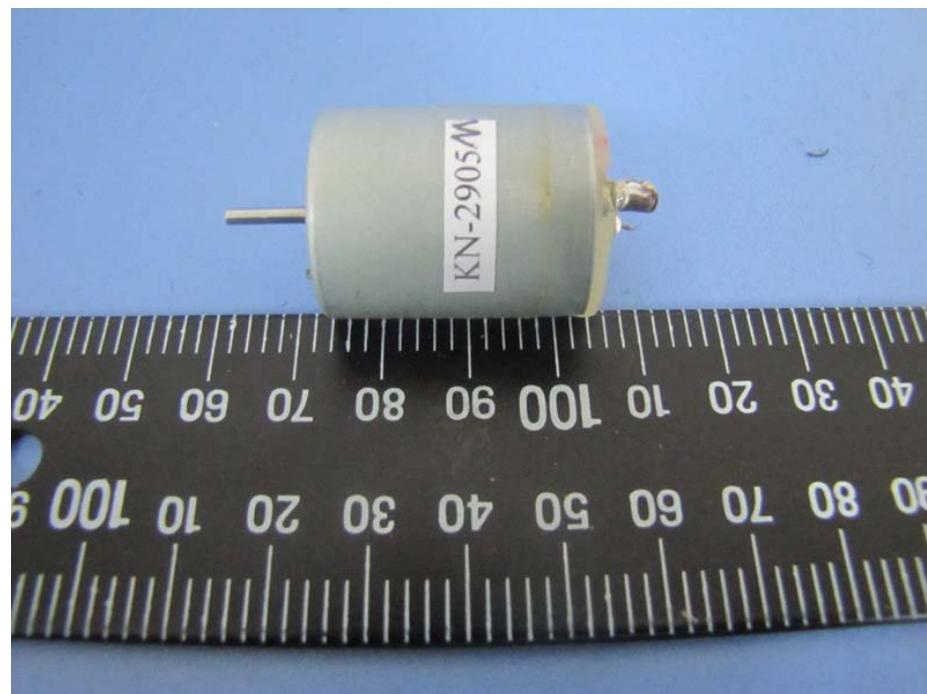


Internal view of model KN-2905

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

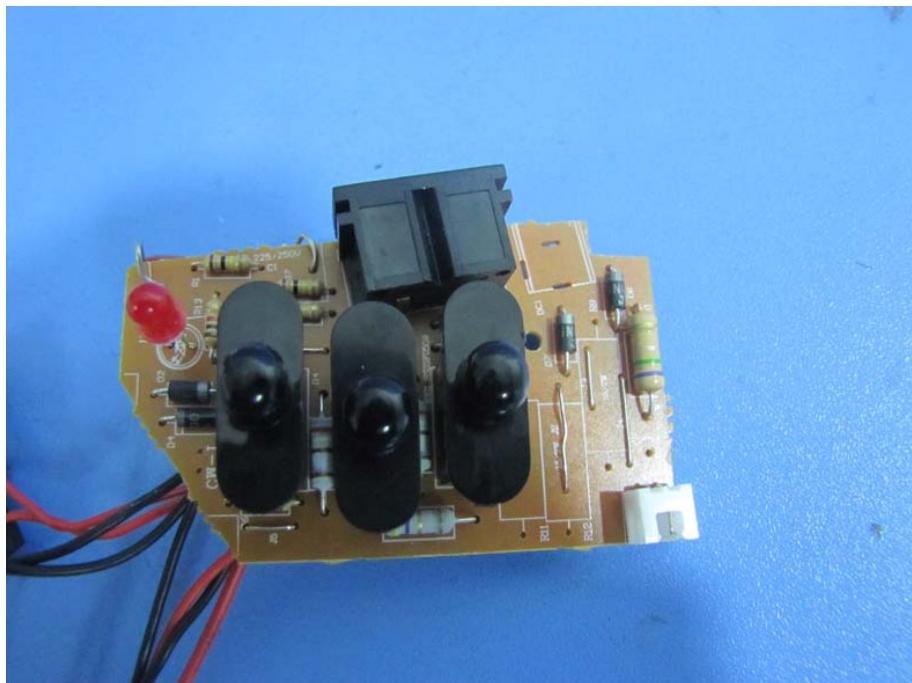


Control panel of model KN-2905

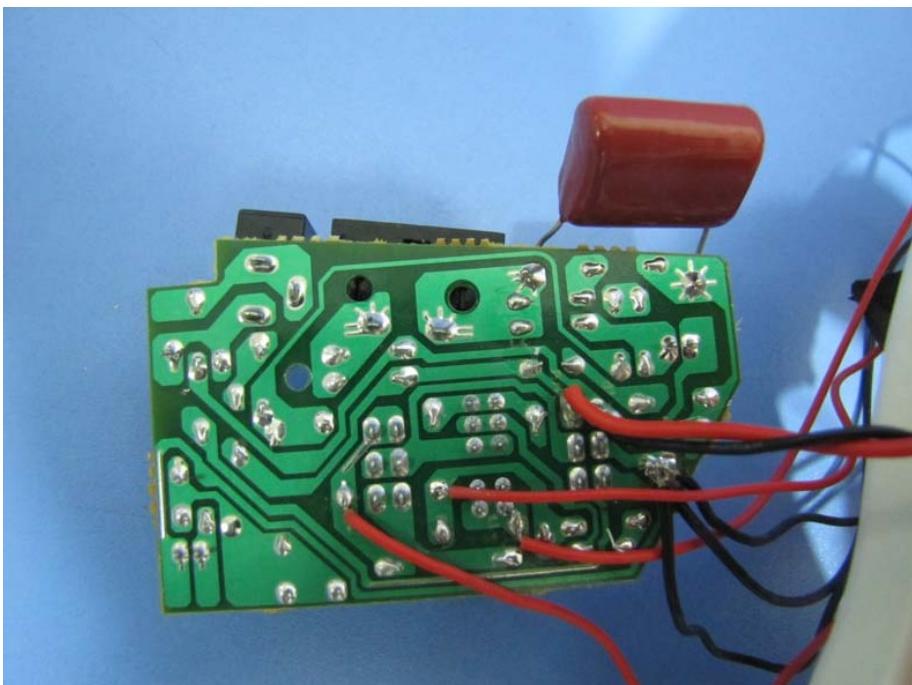


motor of model KN-2905

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Front Commutator PCB on model KN-2905



Back commutator PCB on model KN-2905

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict

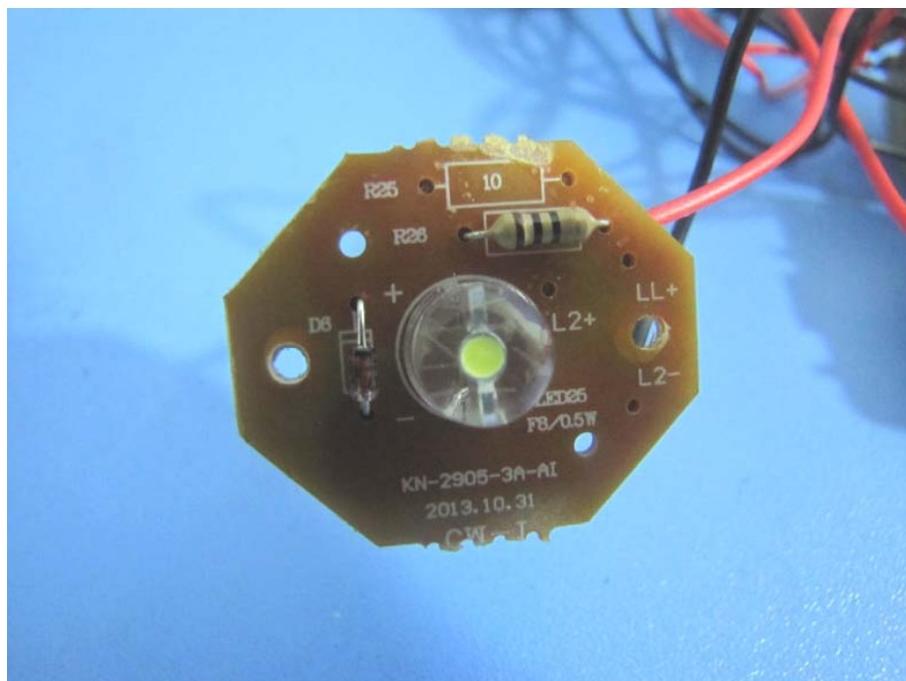


Front overview of LED lamp PCB1 on model KN-2905

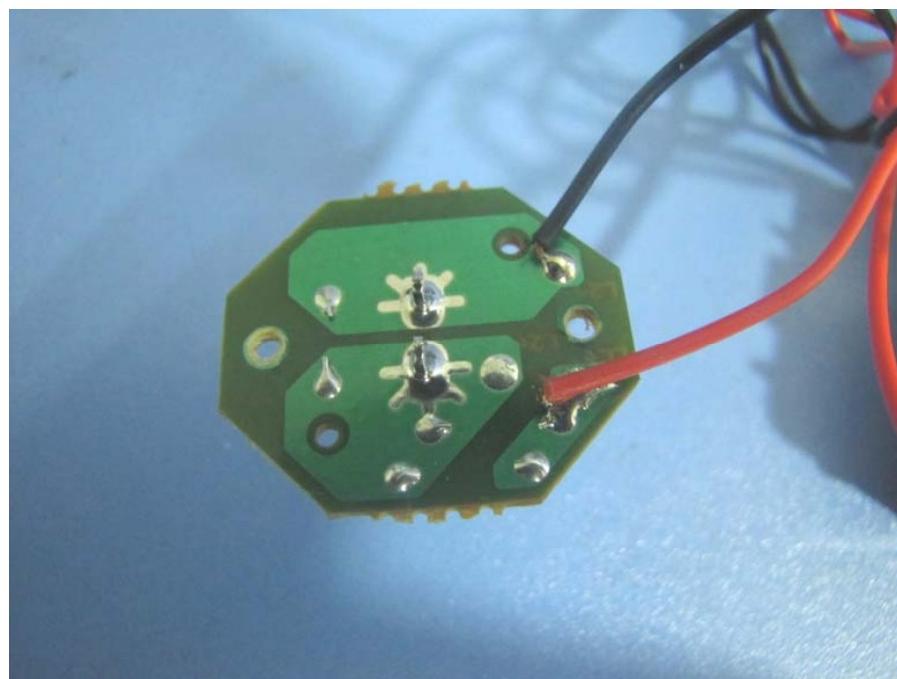


Back overview of LED lamp PCB1 on model KN-2905

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Front overview of LED lamp PCB2 on model KN-2905



Back overview of LED lamp PCB2 on model KN-2905

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Overview of model KN-2903



Overview of model KN-2912

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Overview of model KN-2914



Overview of model KN-2916

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Overview of model KN-2924



Overview of model KN-2914H

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Overview of model KN-2916H



Overview of model KN-2918H

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Overview of model KN-2926H



Overview of model KN-2914HR

IEC60335_2_80E - ATTACHMENT			
Clause	Requirement - Test	Result - Remark	Verdict



Overview of model KN-2916HR



Overview of model KN-2926HR



**TEST REPORT  
IEC 60598-2-4  
Luminaires**

**Part 2: Particular requirements:  
Section Four – Portable general purpose luminaires**

**Report Number.....** : 247910

**Date of issue .....** : 2014-01-08

**Total number of pages .....** 80 pages (including attachments)

**Applicant's name .....** : KENNEDE ELECTRONIC MFG CO., LTD.

**Address .....** : No. 21 Jintong Road, Tangxia Town, Pengjiang District, Jiangmen City, Guangdong Province, China.

**Test specification:**

**Standard .....** : IEC 60598-2-4 (Second Edition):1997 used in conjunction with IEC 60598-1 (Second Edition):2008

**Test procedure.....** : Compliance test

**Non-standard test method.....**: N/A

**Test Report Form No.....** : IEC60598\_2\_4B

**Test Report Form(s) Originator.....** : Intertek Semko AB

**Master TRF .....** : 2013-02

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**Test item description.....** : Rechargeable Fan with LED module

**Trade Mark.....** : **KENNEDE®**

**Manufacturer .....** : Same as Applicant

**Model/Type reference.....** : **KN-29xxx series** (see General product information for detailed information)

**Ratings.....** : 24 W or 30 W 220-240 V~ 50/60 Hz; Cl. II, ta = 40 °C.

**Testing procedure and testing location:**

**Testing Laboratory:** Nemko Hong Kong Ltd.

Testing location/ address..... : Unit 1-5, 15/F, CCT Telecom Building, No. 11 Wo Shing Street, Fotan, Shatin, N.T., Hong Kong

**Associated Laboratory:**

Testing location/ address..... :

Tested by (name + signature) ..... : Eva Dai



Approved by (+ signature)..... : Benny Lan

Testing procedure: TMP

Testing location/ address..... :

Tested by (name + signature) ..... :

Approved by (+ signature)..... :

Testing procedure: WMT

Testing location/ address..... :

Tested by (name + signature) ..... :

Witnessed by (+ signature)..... :

Approved by (+ signature)..... :

Testing procedure: SMT

Testing location/ address..... :

Tested by (name + signature) ..... :

Approved by (+ signature)..... :

Supervised by (+ signature) ..... :

**List of Attachments (including a total number of pages in each attachment):**

Attachment 1: European Group Differences and National Differences ( 2 pages)

Attachment 2: Addition test according to IEC 62031:2008+A1:2012 (7 pages)

Attachment 3: Pictures (28 pages)

**Summary of testing:****Tests performed (name of test and test clause):**

The test samples are complying with the relevant product standard(s) and all applicable test clauses.

The self-ballasted LED modules have been tested according to IEC/EN 62031.

The LED modules used in these products have been tested according to IEC/EN 62471, the retinal blue light hazard or thermal hazard was classified as Exempt Group when LED lighted for all models except models KN-2903, KN-2905 classified as Risk 1.

For detailed information refer to the test report issued by EMTEK with report No. ED140122125S, ED140122126S, ED140122127S, ED140122128S.

**Testing location:**

Nemko Hong Kong Ltd.  
Unit 1-5, 15/F, CCT Telecom Building, No. 11 Wo Shing Street, Fotan, Shatin, N.T., Hong Kong

**Summary of compliance with National Differences:**

List of countries addressed:

- CENELEC members

The product fulfils the requirements of EN 60598-2-4:1997 used in conjunction with EN 60598-1:2008+A11:2009.

**Copy of marking plate**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

Model: KN-2903  
220-240V~50/60Hz  
4W



Kennede Electronics MFG.Co.LTD.

Model: KN-2905  
220-240V~50/60Hz  
5W



Kennede Electronics MFG.Co.LTD.

Model: KN-2712  
220-240V~50/60Hz  
24W



Kennede Electronics MFG.Co.LTD.

Model: KN-2926  
220-240V~50/60Hz  
30W



Kennede Electronics MFG.Co.LTD.

Model: KN-2918H  
220-240V~50/60Hz  
30W



Kennede Electronics MFG.Co.LTD.

Model: KN-2918HR  
220-240V~50/60Hz  
30W



Kennede Electronics MFG.Co.LTD.

<b>Calibration:</b>	All instruments used in the tests given in this test report are calibrated and traceable to national or international standards. Further information about traceability will be given on request.
<b>Measurement uncertainty:</b>	Measurement uncertainties are calculated for all instruments and instrument set-ups given in this report. Calculations are based on the principles given in the standard EA-4/02 (Dec. 1999), IEC Guide 115:2007, Nemko routine L227 and other relevant internal Nemko-procedures. Further information about measurement uncertainties will be given on request.
<b>Evaluation of results:</b>	If not explicitly stated otherwise in the standard, the test is passed if the measured value is equal to or below (above) the limit line, regardless of the measurement uncertainty. If the measured value is above (below) the limit line, the test is not passed - ref IEC Guide 115:2007, and Nemko routine L220. The instrumentation accuracy is within limits agreed by IECEE-CTL (ref. Nemko routine L227).

<b>Test item particulars.....:</b>	
Classification of installation and use.....:	Portable and normal use
Supply Connection.....:	Appliance inlet, detachable cord with plug and connector is delivered together with the appliance, and/or DC inlet
.....:	
.....:	
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object .....	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
<b>Testing .....</b>	
Date of receipt of test item.....:	2013-12-10
Date (s) of performance of tests .....	2013-12-10 to 2014-01-08

**General remarks:**

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a  comma /  point is used as the decimal separator.

Clause numbers between brackets refer to clauses in IEC 60598-1

**Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:**

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....

Yes

Not applicable

When differences exist; they shall be identified in the General product information section.

**Name and address of factory (ies)** ..... : Same as Applicant / Manufacturer

**General product information:**

LED module for rechargeable fan use, incorporated with the integral d.c. supplied electronic circuit for LED module, the integral electronic circuit is supplied by the included rechargeable battery.  
Class II, for indoor use only.

**Main model KN-29xxx series:**

The "xxx" in the type designation can be 12, 14, 16, 24, 26, 14H, 16H, 18H or 26H.

30 W or 24 W 220-240 V~ 50/60 Hz; Cl. II, ta = 40 °C

**Variant 1: KN-290y series**

The y in the type designation can be 3 or 5.

4 W or 5 W 220-240 V~ 50/60 Hz; Cl. II, ta = 40 °C

**Variant 2: KN-29zzHR series**

The zz in the type designation can be 14, 16, 18 or 26.

24 W or 30 W 220-240 V~ 50/60 Hz; Cl. II, ta = 40 °C.

**Variant 3: KN-2712**

24 W 220-240 V~ 50/60 Hz; Cl. II, ta = 40 °C.

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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<b>4.2 (0)</b>	<b>GENERAL TEST REQUIREMENTS</b>	<b>P</b>
4.2 (0.1)	Information for luminaire design considered	Standard Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
4.2 (0.3)	More sections applicable .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

<b>4.4 (2)</b>	<b>CLASSIFICATION</b>	<b>P</b>
4.4 (2.2)	Type of protection (Class 0 excluded)..... : Class II	—
4.4 (2.3)	Degree of protection (Requirement: Ordinary)..... : IP20	—
4.4 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces .....	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	Luminaire not suitable for direct mounting on normally flammable surfaces..... :	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
4.4 (2.5)	Luminaire for normal use .....	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	Luminaire for rough service .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

<b>4.5 (3)</b>	<b>MARKING</b>	<b>P</b>
4.5 (3.2)	Mandatory markings	P
	Position of the marking	P
	Format of symbols/text	P
4.5 (3.3)	Additional information	P
	Language of instructions	English P
4.5 (3.3.1)	Combination luminaires	N/A
4.5 (3.3.2)	Nominal frequency in Hz	N/A
4.5 (3.3.3)	Operating temperature	N/A
4.5 (3.3.4)	Symbol or warning notice	N/A
4.5 (3.3.5)	Wiring diagram	N/A
4.5 (3.3.6)	Special conditions	N/A
4.5 (3.3.7)	Metal halide lamp luminaire – warning	N/A
4.5 (3.3.8)	Limitation for semi-luminaires	N/A
4.5 (3.3.9)	Power factor and supply current	N/A
4.5 (3.3.10)	Suitability for use indoors	ta = 40 °C P
4.5 (3.3.11)	Luminaires with remote control	N/A
4.5 (3.3.12)	Clip-mounted luminaire – warning	N/A
4.5 (3.3.13)	Specifications of protective shields	N/A

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
4.5 (3.3.14)	Symbol for nature of supply		N/A
4.5 (3.3.15)	Rated current of socket outlet		N/A
4.5 (3.3.16)	Rough service luminaire		N/A
4.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	Type X	P
4.5 (3.3.18)	Non-ordinary luminaires with PVC cable		N/A
4.5 (3.3.19)	Protective conductor current in instruction if applicable		N/A
4.5 (3.3.20)	Provided with information if not intended to be mounted within arms reach		N/A
4.5 (3.4)	Test with water		P
	Test with hexane		P
	Legible after test		P
	Label attached		P

<b>4.6 (4)</b>	<b>CONSTRUCTION</b>	<b>P</b>
4.6 (4.2)	Components replaceable without difficulty	N/A
4.6 (4.3)	Wireways smooth and free from sharp edges	N/A
4.6 (4.4)	Lampholders	N/A
4.6 (4.4.1)	Integral lampholder	N/A
4.6 (4.4.2)	Wiring connection	N/A
4.6 (4.4.3)	Lampholder for end-to-end mounting	N/A
4.6 (4.4.4)	Positioning	N/A
	- pressure test (N) ..... :	N/A
	After test the lampholder comply with relevant standard sheets and show no damage	N/A
	After test on single-capped lampholder the lampholder have not moved from its position and show no permanent deformation	N/A
	- bending test (Nm) ..... :	N/A
	After test the lampholder have not moved from its position and show no permanent deformation	N/A
4.6 (4.4.5)	Peak pulse voltage	N/A
4.6 (4.4.6)	Centre contact	N/A
4.6 (4.4.7)	Parts in rough service luminaires resistant to tracking	N/A
4.6 (4.4.8)	Lamp connectors	N/A

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
4.6 (4.4.9)	Caps and bases correctly used		N/A
4.6 (4.5)	Starter holders		N/A
	Starter holder in luminaires other than class II		N/A
	Starter holder class II construction		N/A
4.6 (4.6)	Terminal blocks		N/A
	Tails		N/A
	Unsecured blocks		N/A
4.6 (4.7)	Terminals and supply connections		P
4.6 (4.7.1)	Contact to metal parts		P
4.6 (4.7.2)	Test 8 mm live conductor		N/A
	Test 8 mm earth conductor		N/A
4.6 (4.7.3)	Terminals for supply conductors		N/A
4.6 (4.7.3.1)	Welded connections:		N/A
	- stranded or solid conductor		N/A
	- spot welding		N/A
	- welding between wires		N/A
	- Type Z attachment		N/A
	- mechanical test according to 15.8.2		N/A
	- electrical test according to 15.9		N/A
	- heat test according to 15.9.2.3 and 15.9.2.4		N/A
4.6 (4.7.4)	Terminals other than supply connection		P
4.6 (4.7.5)	Heat-resistant wiring/sleeves		N/A
4.6 (4.7.6)	Multi-pole plug		N/A
	- test at 30 N		N/A
4.6 (4.8)	Switches:		N/A
	- adequate rating		N/A
	- adequate fixing		N/A
	- polarized supply		N/A
	- compliance with 61058-1 for electronic switches		N/A
4.6 (4.9)	Insulating lining and sleeves		N/A
4.6 (4.9.1)	Retention		N/A
	Method of fixing ..... :		N/A
4.6 (4.9.2)	Insulated linings and sleeves		N/A
	Resistant to a temperature > 20 °C to the wire temperature or		N/A

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
	a) & c) Insulation resistance and electric strength		N/A
	b) Ageing test. Temperature (°C) ..... : .....		N/A
4.6 (4.10)	Insulation of Class II luminaires		P
4.6 (4.10.1)	No contact, mounting surface – accessible metal parts – wiring of basic insulation		N/A
	Safe installation fixed luminaires		N/A
	Capacitors and switches		N/A
	Interference suppression capacitors according to IEC 60384-14		N/A
4.6 (4.10.2)	Assembly gaps:		P
	- not coincidental		P
	- no straight access with test probe		P
4.6 (4.10.3)	Retainment of insulation:		N/A
	- fixed		N/A
	- unable to be replaced; luminaire inoperative		N/A
	- sleeves retained in position		N/A
	- lining in lampholder		N/A
4.6 (4.11)	Electrical connections		P
4.6 (4.11.1)	Contact pressure		N/A
4.6 (4.11.2)	Screws:		N/A
	- self-tapping screws		N/A
	- thread-cutting screws		N/A
4.6 (4.11.3)	Screw locking:		N/A
	- spring washer		N/A
	- rivets		N/A
4.6 (4.11.4)	Material of current-carrying parts		P
4.6 (4.11.5)	No contact to wood or mounting surface		P
4.6 (4.11.6)	Electro-mechanical contact systems		N/A
4.6 (4.12)	Mechanical connections and glands		P
4.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N/A
	Torque test: torque (Nm); part ..... : .....	0,5 Nm; Screw fixed the PCB, Ø 3,0 mm	P
	Torque test: torque (Nm); part ..... : .....	0,5 Nm; Screw fixed the lamp cover, Ø 3,0 mm	P
	Torque test: torque (Nm); part ..... : .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N/A
4.6 (4.12.4)	Locked connections:		N/A
	- fixed arms; torque (Nm)..... :		N/A
	- lampholder; torque (Nm)..... :		N/A
	- push-button switches; torque 0,8 Nm..... :		N/A
4.6 (4.12.5)	Screwed glands; moment (Nm) .....	:	N/A
4.6 (4.13)	Mechanical strength		P
4.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm)..... :		P
	- other parts; energy (Nm) .....	: Lamp cover; 0,5 Nm Lamp enclosure; 0,5 Nm Battery compartment; 0,5 Nm	P
	1) live parts		P
	2) linings		N/A
	3) protection		P
	4) covers		P
4.6 (4.13.3)	Straight test finger		P
4.6 (4.13.4)	Rough service luminaires		N/A
	- IP54 or higher		N/A
	a) fixed		N/A
	b) hand-held		N/A
	c) delivered with a stand		N/A
	d) for temporary installations and suitable for mounting on a stand		N/A
4.6 (4.13.6)	Tumbling barrel		N/A
4.6 (4.14)	Suspensions and adjusting devices		N/A
4.6 (4.14.1)	Mechanical load:		N/A
	A) four times the weight		N/A
	B) torque 2,5 Nm		N/A
	C) bracket arm; bending moment (Nm) .....	:	N/A
	D) load track-mounted luminaires		N/A
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) .....	:	N/A
	Metal rod. diameter (mm) .....	:	N/A
	Fixed luminaire or independent control gear without fixing devices		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.6 (4.14.2)	Load to flexible cables		N/A
	Mass (kg) .....		N/A
	Stress in conductors (N/mm <sup>2</sup> ) .....		N/A
	Mass (kg) of semi-luminaire .....		N/A
	Bending moment (Nm) of semi-luminaire .....		N/A
4.6 (4.14.3)	Adjusting devices:		N/A
	- flexing test; number of cycles .....		N/A
	- strands broken		N/A
	- electric strength test afterwards		N/A
4.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors		N/A
4.6 (4.14.5)	Guide pulleys		N/A
4.6 (4.14.6)	Strain on socket-outlets		N/A
4.6 (4.15)	Flammable materials:		P
	- glow-wire test 650 °C		N/A
	- spacing ≥ 30 mm		N/A
	- screen withstandng test of 13.3.1		N/A
	- screen dimensions		N/A
	- no fiercely burning material		P
	- thermal protection		N/A
	- electronic circuits exempted		N/A
4.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		P
	a) construction		P
	b) temperature sensing control		N/A
	c) surface temperature		N/A
4.6 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	No lamp control gear	Electronic control gear (compliance with Section 12)	P
4.6 (4.16.1)	Lamp control gear spacing:		N/A
	- spacing 35 mm		N/A
	- spacing 10 mm		N/A
4.6 (4.16.2)	Thermal protection:		N/A
	- in lamp control gear		N/A
	- external		N/A
	- fixed position		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- temperature marked lamp control gear		N/A
4.6 (4.16.3)	Design to satisfy the test of 12.6	(see 12.6)	N/A
4.6 (4.17)	Drain holes		N/A
	Clearance at least 5 mm		N/A
4.6 (4.18)	Resistance to corrosion:		N/A
4.6 (4.18.1)	- rust-resistance		N/A
4.6 (4.18.2)	- season cracking in copper		N/A
4.6 (4.18.3)	- corrosion of aluminium		N/A
4.6 (4.19)	Ignitors compatible with ballast		N/A
4.6 (4.20)	Rough service vibration		N/A
4.6 (4.21)	Protective shield:		N/A
4.6 (4.21.1)	Shield fitted		N/A
	Shield of glass if tungsten halogen lamps		N/A
4.6 (4.21.2)	Particles from a shattering lamp not impair safety		N/A
4.6 (4.21.3)	No direct path		N/A
4.6 (4.21.4)	Impact test on shield		N/A
	Glow-wire test on lamp compartment		N/A
4.6 (4.22)	Attachments to lamps		N/A
4.6 (4.23)	Semi-luminaires comply Class II		N/A
4.6 (4.24)	UV radiation for tungsten halogen lamps and metal halide lamps (Annex P)		N/A
4.6 (4.25)	No sharp point or edges		P
4.6 (4.26)	Short-circuit protection:		N/A
4.6 (4.26.1)	Uninsulated accessible SELV parts		N/A
4.6 (4.26.2)	Short-circuit test		N/A
4.6 (4.26.3)	Test chain according to Figure 29		N/A
4.6.1 (-)	Insulation not damaged when placing on support		N/A
4.6.2 (-)	Wiring fixed, to avoid rubbing		P
4.6.3 (-)	Stability 6°		P
4.6.4 (-)	Candlestick luminaires with switch		N/A
4.6.5 (-)	E5 lampholders		N/A

<b>4.7 (11)</b>	<b>CREEPAGE DISTANCES AND CLEARANCES</b>	<b>P</b>
	Working voltage (V) ..... : 240 V	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Voltage form	Sinusoidal <input checked="" type="checkbox"/> Non-sinusoidal <input type="checkbox"/>	—
	PTI	< 600 <input checked="" type="checkbox"/> ≥ 600 <input type="checkbox"/>	—
	Impulse withstand category (Normal category II) (Category III Annex U)	Category II <input checked="" type="checkbox"/> Category III <input type="checkbox"/>	—
	Rated pulse voltage (kV) .....	—	—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm) .....	cr > 3,2 ( $\geq 2,5$ ) cl > 2,0 ( $\geq 1,5$ )	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm) .....	cr > 6,5 ( $\geq 5,0$ ) cl > 3,9 ( $\geq 3,0$ )	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm) .....		N/A
	(4) Outer surface of cable where it is clamped and metal parts: cr (mm); cl (mm).....		N/A
	(5) Not used		—
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm) .....	cr > 6,5 ( $\geq 5,0$ ) cl > 3,9 ( $\geq 3,0$ )	P

4.8 (7)	PROVISION FOR EARTHING	N/A
4.8 (7.2.1 + 7.2.3)	Accessible metal parts	N/A
	Metal parts in contact with supporting surface	N/A
	Resistance < 0,5 Ω	N/A
	Self-tapping screws used	N/A
	Thread-forming screws	N/A
	Thread-forming screw used in a grove	N/A
	Earth makes contact first	N/A
4.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.	N/A
4.8 (7.2.4)	Locking of clamping means	N/A
	Compliance with 4.7.3	N/A
	Terminal blocks with integrated screwless earthing contacts tested according Annex V	N/A
4.8 (7.2.5)	Earth terminal integral part of connector socket	N/A
4.8 (7.2.6)	Earth terminal adjacent to mains terminals	N/A
4.8 (7.2.7)	Electrolytic corrosion of the earth terminal	N/A
4.8 (7.2.8)	Material of earth terminal	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	Contact surface bare metal		N/A
4.8 (7.2.10)	Class II luminaire for looping-in		N/A
	Double or reinforced insulation to functional earth		N/A
4.8 (7.2.11)	Earthing core coloured green-yellow		N/A
	Length of earth conductor		N/A

<b>4.9 (14)</b>	<b>SCREW TERMINALS</b>	<b>N/A</b>
	Separately approved; component list	(see Annex 1)
	Part of the luminaire	(see Annex 3)

<b>4.9 (15)</b>	<b>SCREWLESS TERMINALS AND ELECTRICAL CONNECTIONS</b>	<b>P</b>
	Separately approved; component list	Appliance inlet (see Annex 1)
	Part of the luminaire	(see Annex 4)

<b>4.10 (5)</b>	<b>EXTERNAL AND INTERNAL WIRING</b>	<b>P</b>
4.10 (5.2)	Supply connection and external wiring	P
4.10 (5.2.1)	Means of connection.....:	Appliance inlet, detachable cord with plug and connector is delivered together with the appliance
4.10 (5.2.2)	Type of cable .....	H03VVH2-F / H05VVH2-F
	Nominal cross-sectional area (mm <sup>2</sup> ).....:	2 x 0,75
	Cables equal to IEC 60227 or IEC 60245	P
4.10 (5.2.3)	Type of attachment, X, Y or Z	Type X
4.10 (5.2.5)	Type Z not connected to screws	N/A
4.10 (5.2.6)	Cable entries:	P
	- suitable for introduction	P
	- adequate degree of protection	P
4.10 (5.2.7)	Cable entries through rigid material have rounded edges	N/A
4.10 (5.2.8)	Insulating bushings:	N/A
	- suitably fixed	N/A
	- material in bushings	N/A
	- material not likely to deteriorate	N/A
	- tubes or guards made of insulating material	N/A
4.10 (5.2.9)	Locking of screwed bushings	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.10 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		N/A
4.10 (5.2.10.1)	Cord anchorage for type X attachment:		N/A
	a) at least one part fixed		N/A
	b) types of cable		N/A
	c) no damaging of the cable		N/A
	d) whole cable can be mounted		N/A
	e) no touching of clamping screws		N/A
	f) metal screw not directly on cable		N/A
	g) replacement without special tool		N/A
	Glands not used as anchorage		N/A
	Labyrinth type anchorages		N/A
4.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N/A
4.10 (5.2.10.3)	Tests:		N/A
	- impossible to push cable; unsafe		N/A
	- pull test: 25 times; pull (N) .....		N/A
	- torque test: torque (Nm) .....		N/A
	- displacement ≤ 2 mm		N/A
	- no movement of conductors		N/A
	- no damage of cable or cord		N/A
4.10 (5.2.11)	External wiring passing into luminaire		N/A
4.10 (5.2.12)	Looping-in terminals		N/A
4.10 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
4.10 (5.2.14)	Mains plug same protection		P
	Class III luminaire plug		N/A
4.10 (5.2.16)	Appliance inlets (IEC 60320)		P
	Appliance couplers of class II type		P

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Clause	Requirement + Test	Result - Remark	Verdict
4.10 (5.2.17)	No standardized interconnecting cables properly assembled		N/A
4.10 (5.2.18)	Used plug in accordance with		P
	- IEC 60083		P
	- other standard		N/A
4.10 (5.3)	Internal wiring		P
4.10 (5.3.1)	Internal wiring of suitable size and type	26-18 AWG; PVC	P
	Through wiring		N/A
	- not delivered/ mounting instruction		N/A
	- factory assembled		N/A
	- socket outlet loaded (A).....:		N/A
	- temperatures .....: (see Annex 2)		N/A
	Green-yellow for earth only		N/A
4.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N/A
	Cross-sectional area (mm <sup>2</sup> ) .....	:	N/A
	Insulation thickness		N/A
	Extra insulation added where necessary		N/A
4.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N/A
	Adequate cross-sectional area and insulation thickness		N/A
4.10 (5.3.1.3)	Double or reinforced insulation for class II		N/A
4.10 (5.3.1.4)	Conductors without insulation		N/A
4.10 (5.3.1.5)	SELV current-carrying parts		P
4.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N/A
4.10 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		N/A
	Joints, raising/lowering devices		P
	Telescopic tubes etc.		N/A
	No twisting over 360°		P
4.10 (5.3.3)	Insulating bushings:		N/A
	- suitable fixed		N/A
	- material in bushings		N/A
	- material not likely to deteriorate		N/A
	- cables with protective sheath		N/A
4.10 (5.3.4)	Joints and junctions effectively insulated		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.10 (5.3.5)	Strain on internal wiring		N/A
4.10 (5.3.6)	Wire carriers		N/A
4.10 (5.3.7)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N/A
<b>4.11 (8)</b>	<b>PROTECTION AGAINST ELECTRIC SHOCK</b>		<b>P</b>
4.11 (8.2.1)	Live parts not accessible		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		N/A
	Basic insulated parts not accessible with Ø 50 mm probe from outside, within arms reach, on wall-mounted luminaires		N/A
	Lampholder and starterholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N/A
	Basic insulation only accessible under lamp or starter replacement		P
	Protection in any position		P
	Double-ended tungsten filament lamp		N/A
	Insulation lacquer not reliable		N/A
	Double-ended high pressure discharge lamp		N/A
	Relevant warning according to 3.2.18 fitted to the luminaire		N/A
4.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position		P
4.11 (8.2.3.a)	Class II luminaire:		P
	- basic insulated metal parts not accessible during starter or lamp replacement		N/A
	- basic insulation not accessible other than during starter or lamp replacement		P
	- glass protective shields not used as supplementary insulation		N/A
4.11 (8.2.3.b)	BC lampholder of metal in class I luminaires shall be earthed		N/A
4.11 (8.2.3.c)	Class III luminaires with exposed SELV parts:		N/A
	Ordinary luminaire:		N/A
	- touch current ..... : .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- no-load voltage ..... : .....		N/A
	Other than ordinary luminaire:		N/A
	- nominal voltage ..... : .....		N/A
4.11 (8.2.4)	Portable luminaire:		P
	- protection independent of supporting surface		P
	- terminal block completely covered		N/A
4.11 (8.2.5)	Compliance with the standard test finger or relevant probe		P
4.11 (8.2.6)	Covers reliably secured		P
4.11 (8.2.7)	Discharging of capacitors $\geq 0,5 \mu\text{F}$		N/A
	Portable plug connected luminaire with capacitor		N/A
	Other plug connected luminaire with capacitor		N/A
	Discharge device on or within capacitor		N/A
	Discharge device mounted separately		N/A

<b>4.12 (12)</b>	<b>ENDURANCE TEST AND THERMAL TEST</b>		<b>P</b>
4.12 (12.3)	Endurance test:		P
	- mounting-position ..... : .....	Attached to the electronic fan as normal use	—
	- test temperature ( $^{\circ}\text{C}$ ) ..... : .....	$40 + 10 = 50$	—
	- total duration (h) ..... : .....	168	—
	- supply voltage: Un factor; calculated voltage (V):	Battery supplied	—
	- lamp used ..... : .....	Enclosed LED module	—
4.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N/A
	- marking legible		P
	- no cracks, deformation etc.		P
4.12 (12.4)	Thermal test (normal operation)	(see Annex 2)	P
4.12 (12.5)	Thermal test (abnormal operation)	(see Annex 2)	N/A
4.12 (12.6)	Thermal test (failed lamp control gear condition):		N/A
4.12 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A) ..... : .....		—
	- case of abnormal conditions ..... : .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- electronic lamp control gear		N/A
	- measured winding temperature (°C): at 1,1 Un .. :		—
	- measured mounting surface temperature (°C) at 1,1 Un ..... :		N/A
	- calculated mounting surface temperature (°C) .. :		N/A
	- track-mounted luminaires		N/A
4.12 (12.6.2)	Temperature sensing control		N/A
	- case of abnormal conditions..... :		—
	- thermal link		N/A
	- manual reset cut-out		N/A
	- auto reset cut-out		N/A
	- measured mounting surface temperature (°C)...:		N/A
	- track-mounted luminaires		N/A
4.12 (12.7)	Thermal test (failed lamp control gear in plastic luminaires):		N/A
4.12 (12.7.1)	Luminaire without temperature sensing control		N/A
4.12 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N/A
	Test method 12.7.1.1 or Annex V ..... :		—
	Test according to 12.7.1.1:		N/A
	- case of abnormal conditions		—
	- Ballast failure at supply voltage (V) ..... :		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
	Test according to Annex V:		N/A
	- case of abnormal conditions		—
	- measured winding temperature (°C): at 1,1 Un..:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un..... :		—
	- calculated temperature of fixing point/exposed part (°C) ..... :		—
	Ball-pressure test:		N/A
	- part tested; temperature (°C). .... :		N/A
	- part tested; temperature (°C). .... :		N/A
4.12 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		N/A
	- case of abnormal conditions		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- measured winding temperature (°C): at 1,1 Un...:		—
	- measured temperature of fixing point/exposed part (°C): at 1,1 Un.....:		—
	- calculated temperature of fixing point/exposed part (°C) .....		—
	Ball-pressure test:		N/A
	- part tested; temperature (°C)..... :		N/A
	- part tested; temperature (°C)..... :		N/A
4.12 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N/A
	- case of abnormal conditions		—
	- Components retained in place after the test		N/A
	- Test with standard test finger after the test		N/A
4.12 (12.7.2)	Luminaire with temperature sensing control		N/A
	- thermal link	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- manual reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- auto reset cut-out	Yes <input type="checkbox"/> No <input type="checkbox"/>	—
	- case of abnormal conditions		—
	- highest measured temperature of fixing point/exposed part (°C):..... :		—
	Ball-pressure test:		N/A
	- part tested; temperature (°C)..... :		N/A
	- part tested; temperature (°C)..... :		N/A
4.12 (-)	Test overturned position (overturns < 15°)		N/A

4.13 (9)	<b>RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE</b>	P
4.13 (9.2)	Tests for ingress of dust, solid objects and moisture:	P
	- classification according to IP .....	IP20
	- mounting position during test .....	Attached to the electronic fan as normal use
	- fixing screws tightened; torque (Nm)..... :	—
	- tests according to clauses .....	Clause 9.2.0
	- electric strength test afterwards	P
	a) no deposit in dust-proof luminaire	N/A
	b) no talcum in dust-tight luminaire	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		N/A
	d) i) For luminaires without drain holes – no water entry		N/A
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		N/A
	f) no contact with live parts (IP 2X)		P
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A
	g) no trace of water on part of lamp requiring protection from splashing water		N/A
	h) no damage of protective shield or glass envelope		N/A
4.13 (9.3)	Humidity test 48 h	93 % R.H.; 25 °C	P

<b>4.14 (10)</b>	<b>INSULATION RESISTANCE AND ELECTRIC STRENGTH</b>	<b>P</b>
4.14 (10.2.1)	Insulation resistance test	P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø .....	—
	Insulation resistance ( $M\Omega$ )	—
	SELV:	P
	- between current-carrying parts of different polarity .....	> 100 $M\Omega$ ( $\geq 2 M\Omega$ )
	- between current-carrying parts and mounting surface .....	> 100 $M\Omega$ ( $\geq 2 M\Omega$ )
	- between current-carrying parts and metal parts of the luminaire .....	> 100 $M\Omega$ ( $\geq 2 M\Omega$ )
	Other than SELV:	P
	- between live parts of different polarity.....	> 100 $M\Omega$ ( $\geq 2 M\Omega$ )
	- between live parts and mounting surface.....	> 100 $M\Omega$ ( $\geq 4 M\Omega$ )
	- between live parts and metal parts.....	> 100 $M\Omega$ ( $\geq 4 M\Omega$ )
	- between live parts of different polarity through action of a switch .....	N/A
4.14 (10.2.2)	Electric strength test	P
	Dummy lamp	N/A
	Luminaires with ignitors after 24 h test	N/A
	Luminaires with manual ignitors	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Test voltage (V):		P
	SELV:		P
	- between current-carrying parts of different polarity ..... : 500 V	500 V	P
	- between current-carrying parts and mounting surface ..... :	500 V	P
	- between current-carrying parts and metal parts of the luminaire ..... :	500 V	P
	Other than SELV:		P
	- between live parts of different polarity ..... : 1480 V	1480 V	P
	- between live parts and mounting surface..... : 2960 V	2960 V	P
	- between live parts and metal parts..... : 2960 V	2960 V	P
	- between live parts of different polarity through action of a switch ..... :		N/A
4.14 (10.3)	Touch current (mA)..... : 0,001 mA ( $\leq$ 0,7 mA)	0,001 mA ( $\leq$ 0,7 mA)	P

4.15 (13)	<b>RESISTANCE TO HEAT, FIRE AND TRACKING</b>		P
4.15 (13.2.1)	Ball-pressure test:		P
	- part tested; temperature (°C)..... :	Plastic material for enclosure, base, Switch button; 125 °C; Ø 1,2 mm	P
	- part tested; temperature (°C)..... :	Bobbin of transformer; 125 °C; Ø1,2 mm	P
	- part tested; temperature (°C)..... :	PCB; 125 °C; Ø 0,8 mm	P
	- part tested; temperature (°C)..... :	Holder for wire connector; 125 °C; Ø 1,6 mm	P
	- part tested; temperature (°C)..... :	Lamp cover; 75 °C; Ø 1,3 mm	P
4.15 (13.3.1)	Needle flame test (10 s):		P
	- part tested..... :	Bobbin	P
	- part tested..... :	Holder for wire connector	N/A
4.15 (13.3.2)	Glow-wire test (650 °C):		P
	- part tested..... :	Plastic material for enclosure, base, switch button; PCB;	P
	- part tested..... :	Lamp cover	P
4.15 (13.4.1)	Tracking test: part tested .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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	<b>ANNEX 1: components</b>	P
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object/part No.	code	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
EU plug	A	Dongguan Changqi Electronics Co., Ltd	CQ-013	2,5 A, 250 V~	EN 50075	VDE 40015914
	D	Zhongshan Xiaolan Qiangli Electric Factory Co., Ltd.	QL-VA1	2,5 A, 250 V~	EN 50075	VDE 40013545
	D	Interchangeable	Interchangeable	2,5 A, 250 V~	EN 50075	VDE
UK plug	A	Shenzhen Bao'an Xixiang Changxiao Electric Manufacture Factory	CWL668	13 A, 250 V~	BS1363-1	BSI KM82901
	D	Zhong Shan Qiang Li Electrical Factory Co., Ltd.	QL-340	13 A, 250 V~	BS1363-1	ASTA LICENCE NO. 735
	D	Interchangeable	Interchangeable	13 A, 250 V~	BS1363-1	BSI
Appliance inlet	A	Zhejiang Bei Er Jia Electronic Co., Ltd.	ST-A03-002 ST-A03-005	2,5 A 250 V	EN 60320-1	VDE 40014833
Appliance connector	A	Zhejiang Bei Er Jia Electronic Co., Ltd.	ST-A02	10 A 250 V	EN 60320-1	VDE 40007930
Supply cord	A	Dongguan Changqi Electronics Co., Ltd	H03VVH2-F H05VVH2-F	2 x 0,75 mm <sup>2</sup>	HD 21.5 S3	VDE 40011173
	D	Zhongshan Xiaolan Qiangli Electric Factory Co., Ltd.	H03VVH2-F H05VVH2-F	2 x 0,75 mm <sup>2</sup>	HD 21.5 S3	VDE 109832
	D	Interchangeable	H03VVH2-F H05VVH2-F	2 x 0,75 mm <sup>2</sup>	HD 21.5 S3	VDE

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Clause	Requirement + Test				Result - Remark	Verdict
Transformer for KN-2914HR KN-2916HR KN-2914 KN-2916 KN-2914H KN-2916H	C	Kennede Electronics MFG. Co., Ltd.	EI57	I/P: 220-240 V~ 50/60 Hz O/P: 7,5 V~ 2,5 A Class 130 (B)	IEC 60598-1 IEC 60598-2-4	Tested in the appliance
Component of the transformer						
Bobbin	C	Chang Chun Plastics Co Ltd	T375J	V-0	IEC 60598-1 IEC 60598-2-4	Tested in the appliance/ UL E59481
	C	Chang Chun Plastics Co Ltd	4115 (a)	V-0	IEC 60598-1 IEC 60598-2-4	Tested in the appliance/ UL E59481
	C	E I DUPONT DE NEMOURS & CO INC	FR50(+)(f1)	V-0	IEC 60598-1 IEC 60598-2-4	Tested in the appliance/ UL E41938
Thermal link	C	Aupo Electronics Ltd.	A4	2 A 250 V~, 130 °C	IEC/EN 60691	VDE 40008720
Transformer for KN-2712 KN-2912	C	Kennede Electronics MFG. Co., Ltd.	EI48	I/P: 220-240 V~ 50/60 Hz O/P: 7,5 V~ 1,9 A Class 130 (B)	IEC 60598-1 IEC 60598-2-4	Test in the with appliance
Components of transformer						
-Bobbin	C	Chang Chun Plastics Co Ltd	T375J	V-0	IEC 60598-1 IEC 60598-2-4	Tested in the appliance/ UL E59481
	C	Chang Chun Plastics Co Ltd	4115 (a)	V-0	IEC 60598-1 IEC 60598-2-4	Tested in the appliance/ UL E59481
	C	E I DUPONT DE NEMOURS & CO INC	FR50(+)(f1)	V-0	IEC 60598-1 IEC 60598-2-4	Tested in the appliance/ UL E41938
-Thermal link	A	Aupo Electronics Ltd.	A4	2 A, 250 V~, Tf 130 °C	IEC/EN 60691	Tested in the appliance/ VDE 40008720

## IEC 60598-2-4

Clause	Requirement + Test				Result - Remark	Verdict
Transformer for KN-2924 KN-2926 KN-2918H KN-2926H KN-2926HR KN-2918HR	A	Kennede Electronics MFG. Co., Ltd.	EI57	I/P: 220-240 V~ 50/60 Hz O/P: 12,5 V~ 1,5 A Class 130 (B)	IEC 60598-1 IEC 60598-2-4	Test with appliance
Components of transformer						
- Bobbin	C	Chang Chun Plastics Co Ltd	T375J	V-0	IEC 60598-1 IEC 60598-2-4	Tested in the appliance/ UL E59481
	C	Chang Chun Plastics Co Ltd	4115 (a)	V-0	IEC 60598-1 IEC 60598-2-4	Tested in the appliance/ UL E59481
	C	E I DUPONT DE NEMOURS & CO INC	FR50(+)(f1)	V-0	IEC 60598-1 IEC 60598-2-4	Tested in the appliance/ UL E41938
- Thermal link	A	Aupo Electronics Ltd.	A4	2 A, 250 V~, Tf 130 °C	IEC/EN 60691	Tested in the appliance/ VDE 40008720
Internal wiring	C	Jiang Men Jia Chuan Electric & Cable Co., Ltd.	1007	300 V~, 18-26 AWG, 80 °C	IEC 60598-1 IEC 60598-2-4	Tested in the appliance UL E315723
	C	Zhongshan Yong Roi Electric Factory Co., Ltd.	1007	300 V~, 18-26 AWG, 80 °C	IEC 60598-1 IEC 60598-2-4	Tested in the appliance UL E204893
	C	Jiang Men Jia Chuan Electric & Cable Co LTD	1015	600 V~, 18-26 AWG, 105 °C	IEC 60598-1 IEC 60598-2-4	Tested in the appliance UL E315723
	C	Zhongshan Yong Roi Electric Factory Co., Ltd.	1015	600 V~, 18-26 AWG, 105 °C	IEC 60598-1 IEC 60598-2-4	Tested in the appliance UL E204893
Plastic material for enclosure, base, switch/control button	C	Chi Mei Corporation	PA-764(+)	ABS ,V-0 Thickness of enclosure: 2,1 mm	IEC 60598-1 IEC 60598-2-4	Tested in appliance UL E56070
Heat shrinkable tube for KN-2903, KN-2905	C	Shenzhen Woer Heat-Shrinkable Material Co., Ltd.	RSFR-H	600 V, 125 °C	IEC 60598-1 IEC 60598-2-4	Tested in appliance UL E203950

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Clause	Requirement + Test			Result - Remark		Verdict
		Dongguan Salipt Co., Ltd.	SALIPT S-901-600	600 V, 125 °C	IEC 60598-1 IEC 60598-2-4	Tested in appliance UL E209436
Holder for wire connector (except for KN-2903)	C	Foshan Shunde Kenda Electrical Factory	CT-2	3 A	IEC 60598-1 IEC 60598-2-4	Tested in appliance/
PCB	C	Jiang Men Chang Ming PCB Factory	CM-1	V-0	IEC 60598-1 IEC 60598-2-4	Tested in appliance UL E232206
Current fuse for KN-2903 & KN-2905	A	Shenzhen Lanson Electronics Co. Ltd.	3K T1A250V	1 A, 250 V	EN 60127-1 EN 60127-3	VDE 40010682
	D	Dongguan Better Electronic Technology Co., Ltd.	334-Series(s)	1 A, 250 V	EN 60127-1 EN 60127-3	VDE 40025428
Switch for model KN-2903	C	KEXIN	SS22F25G7	DC 50V 0,3A	IEC 60598-1 IEC 60598-2-4	Tested in appliance
Switch for model KN-2905	C	KEXIN	SS22F25G9	DC 50V 0,3A	IEC 60598-1 IEC 60598-2-4	Tested in appliance
Switches for models KN-2926H, KN-2918H, KN-2926, KN-2924, KN-2916H, KN-2914H, KN-2916, KN-2914 KN-2912 KN-2712	C	Heng Mei Electronics Co., Ltd.	SS43D015GB 5	DC 50V 0,3A	IEC 60598-1 IEC 60598-2-4	Tested in appliance
Battery for KN-2926HR, KN-2918HR, KN-2926H, KN-2918H, KN-2926, KN-2924	C	Chee Yuen Plastic Product (Huizhou) Co., Ltd.	RB1245B	12V/4,5Ah Sealed lead- acid rechargeable battery	IEC 60335-2-80	Tested in appliance
	C	Kennede Electronics MFG. Co., Ltd.	RB1245B	12V/4,5Ah Sealed lead- acid rechargeable battery	IEC 60335-2-80	Tested in appliance

## IEC 60598-2-4

Clause	Requirement + Test			Result - Remark		Verdict
Battery for KN-2916HR, KN-2914HR, KN-2916H, KN-2914H, KN-2916, KN-2914	C	Chee Yuen Plastic Product (Huizhou) Co., Ltd.	RB670B	6V/7Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
	C	Kennede Electronics MFG. Co., Ltd.	RB670B	6V/7Ah Sealed lead-acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Battery for KN-2912, KN-2712	C	Chee Yuen Plastic Product (Huizhou) Co., Ltd.	RB645B	6V/4,5Ah Sealed lead- acid rechargeable battery	IEC 60335-2-80	Tested in appliance
	C	Kennede Electronics MFG. Co., Ltd.	RB645B	6V/4,5Ah Sealed lead- acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Battery for KN-2905	C	Chee Yuen Plastic Product (Huizhou) Co., Ltd.	RB416B	4V/1,6Ah Sealed lead- acid rechargeable battery	IEC 60335-2-80	Tested in appliance
	C	Kennede Electronics MFG. Co., Ltd.	RB416B	4V/1,6Ah Sealed lead- acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Battery for KN-2903	C	Chee Yuen Plastic Product (Huizhou) Co., Ltd.	RB409B	4V/0,9Ah Sealed lead- acid rechargeable battery	IEC 60335-2-80	Tested in appliance
	C	Kennede Electronics MFG. Co., Ltd.	RB409B	4V/0,9Ah Sealed lead- acid rechargeable battery	IEC 60335-2-80	Tested in appliance
Weak part (other fuse)		Zhongshan Sanhe Electronic Co., Ltd.	2F	AC250V, 3A	IEC 60335-2-80	Tested in appliance
Lamp cover		Chi Mei Cooperation	PG-33	PS, HB	IEC 60598-1 IEC 60598-2-4	Tested in appliance UL E56070

## IEC 60598-2-4

Clause	Requirement + Test			Result - Remark	Verdict
LED for KN-2921, KN-2914, KN-2916, KN-2924, KN-2926, KN-2914H, KN-2916H, KN-2918H, KN-2926H	C	--	--	Exempt group	IEC 62471  Tested in appliance Refer to EMTEK report ED14012212 5S
LED for KN-2914HR, KN-2916HR, KN-2918HR, KN-2926HR	C	--	--	Exempt group	IEC 62471  Tested in appliance Refer to EMTEK report ED14012212 6S
LED for KN-2712	C	--	--	Exempt group	IEC 62471  Tested in appliance Refer to EMTEK report ED14012212 7S
LED for KN-2903, KN-2905	C	--	--	Risk 1	IEC 62471  Tested in appliance Refer to EMTEK report ED14012212 8S

The codes above have the following meaning:

- A - The component is replaceable with another one, also certified, with equivalent characteristics
- B - The component is replaceable if authorised by the test house
- C - Integrated component tested together with the appliance
- D - Alternative component

\* Component has been certified by UL according to UL standards. Compliance with the requirements of the product standard(s) has been checked.

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
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	<b>ANNEX 2: temperature measurements, thermal tests of Section 12</b>	<b>P</b>
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Type reference .....	KN-2905	—
Lamp used.....:	Enclosed LED module	—
Lamp control gear used .....	Integral d.c. supplied electronic circuit for LED module	—
Mounting position of luminaire .....	Attached to the electronic fan	—
Supply wattage (W).....:	test 2: 2,4	—
Supply current (A) .....	test 2: —	—
Calculated power factor .....	—	—
Table: measured temperatures corrected for $ta = 40^{\circ}\text{C}$ :		P
- abnormal operating mode .....	—	—
- test 1: rated voltage .....	—	—
- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....:	$1,06 \times 240 \text{ V} = 254,4 \text{ V}$ (work on AC & charge mode)	—
- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	—	—
- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....:	Battery supplied (discharge mode)	—
Through wiring or looping-in wiring loaded by a current of A during the test .....	—	—

temperature ( $^{\circ}\text{C}$ ) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Pins of appliance inlet	—	50	—	70	42	—
Main PCB	—	60	—	130	43	—
Internal wire	—	51	—	80	43	—
Control board	—	43	—	Ref.	42	—
Battery	—	51	—	Ref.	45	—
Holder for wire connector	—	48	—	Ref.	44	—
Test corner	—	42	—	90	42	130
ta switch for lighting	—	50	—	Ref.	43	—
Heat shrinkable tube	—	44	—	125	43	—
LED lamp cover	—	46	—	75	42	—

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Clause	Requirement + Test	Result - Remark	Verdict
	Type reference .....	KN-2903	—
	Lamp used.....	Enclosed LED module	—
	Lamp control gear used .....	Integral d.c. supplied electronic circuit for LED module	—
	Mounting position of luminaire .....	Attached to the electronic fan	—
	Supply wattage (W) .....	test 2: 1,8	—
	Supply current (A) .....	test 2: —	—
	Calculated power factor .....	—	—
	Table: measured temperatures corrected for $ta = 40^{\circ}\text{C}$ :		P
	- abnormal operating mode .....	—	—
	- test 1: rated voltage .....	—	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1,06 x 240 V = 254,4 V (work on AC & charge mode)	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	Battery supplied (discharge mode)	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....	—	—

temperature ( $^{\circ}\text{C}$ ) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Pins of appliance inlet	—	51	—	70	46	—
Main PCB	—	61	—	130	46	—
Internal wire	—	52	—	80	48	—
Control board	—	44	—	Ref.	48	—
Battery	—	44	—	Ref.	46	—
Test corner	—	42	—	90	45	130
ta switch for lighting	—	49	—	Ref.	44	—
Heat shrinkable tube	—	43	—	125	43	—
LED lamp cover	—	52	—	75	51	—

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
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	Type reference .....	KN-2712	—
	Lamp used.....	Enclosed LED module	—
	Lamp control gear used .....	Integral d.c. supplied electronic circuit for LED module	—
	Mounting position of luminaire .....	Attached to the electronic fan	—
	Supply wattage (W).....	test 2: 26,2	—
	Supply current (A) .....	test 2: —	—
	Calculated power factor .....	—	—
	Table: measured temperatures corrected for $ta = 40^{\circ}\text{C}$ :	P	
	- abnormal operating mode .....	—	—
	- test 1: rated voltage .....	—	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	$1,06 \times 240 \text{ V} = 254,4 \text{ V}$ (work on AC & charge mode)	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	Battery supplied (discharge mode)	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....	—	—

temperature ( $^{\circ}\text{C}$ ) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Pins of appliance inlet	—	60	—	70	41	—
Pri-winding of transformer	—	100	—	130	41	175
Sec-winding of transformer	—	105	—	130	41	175
Main PCB	—	77	—	130	49	—
Internal wire	—	52	—	80	47	—
Control board	—	45	—	Ref.	43	—
Battery	—	46	—	Ref.	46	—
Test corner	—	46	—	90	46	130
ta switch for lighting	—	51	—	Ref.	43	—
Heat shrinkable tube	—	57	—	125	51	—
LED lamp cover	—	48	—	75	48	—

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
	Type reference .....	KN-2926	—
	Lamp used.....	Enclosed LED module	—
	Lamp control gear used .....	Integral d.c. supplied electronic circuit for LED module	—
	Mounting position of luminaire .....	Attached to the electronic fan	—
	Supply wattage (W) .....	test 2: 34,6	—
	Supply current (A) .....	test 2: —	—
	Calculated power factor .....	—	—
	Table: measured temperatures corrected for $ta = 40^{\circ}\text{C}$ :		P
	- abnormal operating mode .....	—	—
	- test 1: rated voltage .....	—	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1,06 x 240 V = 254,4 V (work on AC & charge mode)	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	Battery supplied (discharge mode)	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....	—	—

temperature ( $^{\circ}\text{C}$ ) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Pins of appliance inlet	—	55	—	70	41	—
Pri-winding of transformer	—	98	—	130	41	175
Sec-winding of transformer	—	99	—	130	42	175
Main PCB	—	113	—	130	76	—
Internal wire	—	72	—	80	71	—
Control board	—	46	—	Ref.	44	—
Battery	—	47	—	Ref.	47	—
Test corner	—	44	—	90	43	130
ta switch for lighting	—	58	—	Ref.	49	—
Heat shrinkable tube	—	62	—	125	58	—
LED lamp cover	—	47	—	75	46	—

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
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	Type reference .....	KN-2912	—
	Lamp used.....	Enclosed LED module	—
	Lamp control gear used .....	Integral d.c. supplied electronic circuit for LED module	—
	Mounting position of luminaire .....	Attached to the electronic fan	—
	Supply wattage (W).....	test 2: 23,2	—
	Supply current (A) .....	test 2: —	—
	Calculated power factor .....	—	—
	Table: measured temperatures corrected for $ta = 40^{\circ}\text{C}$ :	P	
	- abnormal operating mode .....	—	—
	- test 1: rated voltage .....	—	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	$1,06 \times 240 \text{ V} = 254,4 \text{ V}$ (work on AC & charge mode)	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	Battery supplied (discharge mode)	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....	—	—

temperature ( $^{\circ}\text{C}$ ) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Pins of appliance inlet	—	55	—	70	42	—
Pri-winding of transformer	—	90	—	130	42	175
Sec-winding of transformer	—	97	—	130	42	175
Main PCB	—	122	—	130	57	—
Internal wire	—	60	—	80	49	—
Control board	—	43	—	Ref.	44	—
Battery	—	58	—	Ref.	51	—
Test corner	—	47	—	90	42	130
ta switch for lighting	—	52	—	Ref.	45	—
Heat shrinkable tube	—	52	—	125	50	—
LED lamp cover	—	47	—	75	44	—

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
	Type reference .....	KN-2916	—
	Lamp used.....	Enclosed LED module	—
	Lamp control gear used .....	Integral d.c. supplied electronic circuit for LED module	—
	Mounting position of luminaire .....	Attached to the electronic fan	—
	Supply wattage (W) .....	test 2: 26,3	—
	Supply current (A) .....	test 2: —	—
	Calculated power factor .....	—	—
	Table: measured temperatures corrected for $ta = 40^{\circ}\text{C}$ :		P
	- abnormal operating mode .....	—	—
	- test 1: rated voltage .....	—	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1,06 x 240 V = 254,4 V (work on AC & charge mode)	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	Battery supplied (discharge mode)	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....	—	—

temperature ( $^{\circ}\text{C}$ ) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Pins of appliance inlet	—	61	—	70	46	—
Pri-winding of transformer	—	97	—	130	46	175
Sec-winding of transformer	—	99	—	130	46	175
Main PCB	—	110	—	130	60	—
Internal wire	—	67	—	80	57	—
Control board	—	51	—	Ref.	46	—
Battery	—	58	—	Ref.	46	—
Test corner	—	46	—	90	46	130
ta switch for lighting	—	56	—	Ref.	46	—
Heat shrinkable tube	—	54	—	125	52	—
LED lamp cover	—	52	—	75	48	—

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
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	Type reference .....	KN-2918HR	—
	Lamp used.....	Enclosed LED module	—
	Lamp control gear used .....	Integral d.c. supplied electronic circuit for LED module	—
	Mounting position of luminaire .....	Attached to the electronic fan	—
	Supply wattage (W).....	test 2: 35,2	—
	Supply current (A) .....	test 2: —	—
	Calculated power factor .....	—	—
	Table: measured temperatures corrected for $ta = 40^{\circ}\text{C}$ :	P	
	- abnormal operating mode .....	—	—
	- test 1: rated voltage .....	—	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	$1,06 \times 240 \text{ V} = 254,4 \text{ V}$ (work on AC & charge mode)	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	Battery supplied (discharge mode)	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....	—	—

temperature ( $^{\circ}\text{C}$ ) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Pins of appliance inlet	—	60	—	70	45	—
Pri-winding of transformer	—	97	—	130	46	175
Sec-winding of transformer	—	93	—	130	46	175
Main PCB	—	85	—	130	70	—
Internal wire	—	66	—	80	50	—
Control board	—	49	—	Ref.	46	—
Battery	—	58	—	Ref.	47	—
Test corner	—	46	—	90	42	130
ta switch for lighting	—	68	—	Ref.	57	—
Heat shrinkable tube	—	65	—	125	51	—
LED lamp cover	—	57	—	75	55	—

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
	Type reference .....	KN-2926HR	—
	Lamp used.....	Enclosed LED module	—
	Lamp control gear used .....	Integral d.c. supplied electronic circuit for LED module	—
	Mounting position of luminaire .....	Attached to the electronic fan	—
	Supply wattage (W) .....	test 2: 34,8	—
	Supply current (A) .....	test 2: —	—
	Calculated power factor .....	—	—
	Table: measured temperatures corrected for $ta = 40^{\circ}\text{C}$ :		P
	- abnormal operating mode .....	—	—
	- test 1: rated voltage .....	—	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1,06 x 240 V = 254,4 V (work on AC & charge mode)	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	Battery supplied (discharge mode)	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....	—	—

temperature ( $^{\circ}\text{C}$ ) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Pins of appliance inlet	—	41	—	70	41	—
Pri-winding of transformer	—	106	—	130	41	175
Sec-winding of transformer	—	106	—	130	42	175
Main PCB	—	95	—	130	76	—
Internal wire	—	64	—	80	71	—
Control board	—	45	—	Ref.	44	—
Battery	—	49	—	Ref.	47	—
Test corner	—	43	—	90	43	130
Heat shrinkable tube	—	72	—	125	58	—
LED lamp cover	—	48	—	75	46	—

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
	Type reference .....	KN-2914HR	—
	Lamp used.....	Enclosed LED module	—
	Lamp control gear used .....	Integral d.c. supplied electronic circuit for LED module	—
	Mounting position of luminaire .....	Attached to the electronic fan	—
	Supply wattage (W) .....	test 2: 25,4	—
	Supply current (A) .....	test 2: —	—
	Calculated power factor .....	—	—
	Table: measured temperatures corrected for $ta = 40^{\circ}\text{C}$ :		P
	- abnormal operating mode .....	—	—
	- test 1: rated voltage .....	—	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1,06 x 240 V = 254,4 V (work on AC & charge mode)	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	Battery supplied (discharge mode)	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....	—	—

temperature ( $^{\circ}\text{C}$ ) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Pins of appliance inlet	—	59	—	70	48	—
Pri-winding of transformer	—	89	—	130	48	175
Sec-winding of transformer	—	85	—	130	48	175
Main PCB	—	89	—	130	60	—
Internal wire	—	64	—	80	55	—
Control board	—	48	—	Ref.	47	—
Battery	—	52	—	Ref.	50	—
Test corner	—	46	—	90	45	130
Heat shrinkable tube	—	68	—	125	50	—
LED lamp cover	—	50	—	75	49	—

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
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	Type reference .....	KN-2918HR	—
	Lamp used.....	Enclosed LED module	—
	Lamp control gear used .....	Integral d.c. supplied electronic circuit for LED module	—
	Mounting position of luminaire .....	Attached to the electronic fan	—
	Supply wattage (W).....	test 2: 36,8	—
	Supply current (A) .....	test 2: —	—
	Calculated power factor .....	—	—
	Table: measured temperatures corrected for ta = 40 °C:	P	
	- abnormal operating mode .....	—	—
	- test 1: rated voltage .....	—	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1,06 x 240 V = 254,4 V (work on AC & charge mode)	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	Battery supplied (discharge mode)	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....	—	—

temperature (°C) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Pins of appliance inlet	—	56	—	70	45	—
Pri-winding of transformer	—	102	—	130	45	175
Sec-winding of transformer	—	101	—	130	45	175
Main PCB	—	85	—	130	55	—
Internal wire	—	65	—	80	46	—
Control board	—	49	—	Ref.	45	—
Battery	—	63	—	Ref.	47	—
Test corner	—	51	—	90	44	130
Heat shrinkable tube	—	60	—	125	48	—
LED lamp cover	—	52	—	75	48	—

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
	Type reference .....	KN-2914H	—
	Lamp used.....	Enclosed LED module	—
	Lamp control gear used .....	Integral d.c. supplied electronic circuit for LED module	—
	Mounting position of luminaire .....	Attached to the electronic fan	—
	Supply wattage (W) .....	test 2: 26,5	—
	Supply current (A) .....	test 2: —	—
	Calculated power factor .....	—	—
	Table: measured temperatures corrected for $ta = 40^{\circ}\text{C}$ :		P
	- abnormal operating mode .....	—	—
	- test 1: rated voltage .....	—	—
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....	1,06 x 240 V = 254,4 V (work on AC & charge mode)	—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage .....	—	—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....	Battery supplied (discharge mode)	—
	Through wiring or looping-in wiring loaded by a current of A during the test .....	—	—

temperature ( $^{\circ}\text{C}$ ) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	test 1	test 2	test 3	limit	test 4	limit
Pins of appliance inlet	—	59	—	70	46	—
Pri-winding of transformer	—	91	—	130	46	175
Sec-winding of transformer	—	89	—	130	46	175
Main PCB	—	103	—	130	56	—
Internal wire	—	70	—	80	51	—
Control board	—	50	—	Ref.	46	—
Battery	—	54	—	Ref.	46	—
Test corner	—	48	—	90	47	130
Heat shrinkable tube	—	66	—	125	48	—
LED lamp cover	—	51	—	75	47	—

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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	<b>ANNEX 3: screw terminals (part of the luminaire)</b>	N/A
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<b>(14)</b>	<b>SCREW TERMINALS</b>	N/A
(14.2)	Type of terminal.....: .....	—
	Rated current (A).....: .....	—
(14.3.2.1)	One or more conductors	N/A
(14.3.2.2)	Special preparation	N/A
(14.3.2.3)	Terminal size	N/A
	Cross-sectional area (mm <sup>2</sup> ).....: .....	N/A
(14.3.3)	Conductor space (mm).....: .....	N/A
(14.4)	Mechanical tests	N/A
(14.4.1)	Minimum distance	N/A
(14.4.2)	Cannot slip out	N/A
(14.4.3)	Special preparation	N/A
(14.4.4)	Nominal diameter of thread (metric ISO thread) ..: M	N/A
	External wiring	N/A
	No soft metal	N/A
(14.4.5)	Corrosion	N/A
(14.4.6)	Nominal diameter of thread (mm) .....: .....	N/A
	Torque (Nm).....: .....	N/A
(14.4.7)	Between metal surfaces	N/A
	Lug terminal	N/A
	Mantle terminal	N/A
	Pull test; pull (N).....: .....	N/A
(14.4.8)	Without undue damage	N/A

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark	Verdict
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	<b>ANNEX 4: screwless terminals (part of the luminaire)</b>		N/A
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<b>(15)</b>	<b>SCREWLESS TERMINALS</b>		N/A
(15.2)	Type of terminal.....: ..		—
	Rated current (A).....: ..		—
(15.3.1)	Material		N/A
(15.3.2)	Clamping		N/A
(15.3.3)	Stop		N/A
(15.3.4)	Unprepared conductors		N/A
(15.3.5)	Pressure on insulating material		N/A
(15.3.6)	Clear connection method		N/A
(15.3.7)	Clamping independently		N/A
(15.3.8)	Fixed in position		N/A
(15.3.10)	Conductor size		N/A
	Type of conductor		N/A
(15.5.1)	Terminals internal wiring		N/A
(15.5.1.1)	Pull test spring-type terminals (4 N, 4 samples) ..:		N/A
(15.5.1.2)	Pull test pin or tab terminals (4 N, 4 samples) ..:		N/A
	Insertion force not exceeding 50 N		N/A
(15.5.2)	Permanent connections: pull-off test (20 N)		N/A
(15.6)	Electrical tests		N/A
	Voltage drop (mV) after 1 h (4 samples).....: ..		N/A
	Voltage drop of two inseparable joints		N/A
	Number of cycles.....: ..		—
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....: ..		N/A
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....: ..		N/A
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples) .....		N/A
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples) .....		N/A
(15.7)	Terminals external wiring		N/A
	Terminal size and rating		N/A

## IEC 60598-2-4

Clause	Requirement + Test	Result - Remark									Verdict
(15.8.1)	Pull test spring-type terminals or welded connections (4 samples); pull (N) .....										N/A
	Pull test pin or tab terminals (4 samples); pull (N) .....										N/A
(15.9)	Contact resistance test										N/A
	Voltage drop (mV) after 1 h										N/A
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Voltage drop of two inseparable joints										N/A
	Voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV)..... :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Voltage drop after 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV)..... :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Continued ageing: voltage drop after 10th alt. 25th cycle										N/A
	Max. allowed voltage drop (mV)..... :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											
	Continued ageing: voltage drop after 50th alt. 100th cycle										N/A
	Max. allowed voltage drop (mV)..... :										—
terminal	1	2	3	4	5	6	7	8	9	10	
voltage drop (mV)											

**IEC 60598-2-4\_ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
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	<b>Attachment 1: European Group Differences and National Differences</b>	<b>P</b>
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**ATTACHMENT TO TEST REPORT IEC 60598-2-4  
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES**

Luminaires

Part 2: Particular requirements:

Section Four – Portable general purpose luminaires

**Differences according** .....: EN 60598-2-4:1997 used in conjunction with  
EN 60598-1:2008 + A11:2009**Annex Form No.**.....: EU\_GD\_IEC\_60598\_2\_4A

Annex Form Originator .....: IMQ S.p.A.

Master Annex Form .....: 2009-09

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	<b>CENELEC COMMON MODIFICATIONS (EN)</b>	<b>P</b>
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<b>4.5 (3)</b>	<b>MARKING</b>	<b>P</b>
4.5 (3.3.101)	Adequate warning on the package	N/A

<b>4.6 (4)</b>	<b>CONSTRUCTION</b>	<b>P</b>
4.6 (4.11.6)	Electro-mechanical contact systems	N/A

<b>4.10 (5)</b>	<b>EXTERNAL AND INTERNAL WIRING</b>	<b>P</b>
4.10 (5.2.1)	Connecting leads	N/A
	- without a means for connection to the supply	N/A
	- terminal block specified	N/A
	- relevant information provided	N/A
	- compliance with 4.6, 4.7.1, 4.7.2, 4.10.1, 11.2, 12 and 13.2 of Part 1	N/A
4.10 (5.2.2)	Cables equal to HD21 S2 or HD22 S2	P

<b>4.12 (12)</b>	<b>ENDURANCE TEST AND THERMAL TEST</b>	<b>P</b>
4.12 (12.4.2c)	Thermal test (normal operation)	N/A

**IEC 60598-2-4\_ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
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ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)	P
(3.3)	DK: power supply cord with label	N/A
	IT: warning label on Class 0 luminaire	N/A
(4.5.1)	DK: socket-outlets	N/A
(5.2.1)	CY, DK, FI, SE, GB: type of plug	GB plug
		P

ZC	ANNEX ZC, NATIONAL DEVIATIONS (EN)	N/A
(4 & 5)	FR: Shuttered socket-outlets 10/16A	N/A
(13.3)	FR: Glow-wire test 850°C alt. 750°C for luminaires in premises open to public or 960°C for luminaires in emergency exits	N/A
(13.3)	GB: Requirements according to United Kingdom Building Regulation	N/A

**IEC 60598-2-4\_ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
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	<b>Attachment 2: Addition test according to IEC 62031:2008+A1:2012</b>	<b>P</b>
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4	GENERAL REQUIREMENTS	P
4.4	Integral modules treated as part of luminaires defined in clause 0.5 of IEC 60598-1	Yes
4.5	Independent modules complies with requirements in IEC 60598-1	No

5	GENERAL TEST REQUIREMENTS	P
5.5	SELV-operated LED modules comply with Annex I of IEC 61347-2-13 (see Annex B)	P

6	CLASSIFICATION	P
	Built-in module .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	Independent module .....	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
	Integral module .....	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	For Integral module; Note to 1.2.1 in IEC 60598-1 applies.	P

7	MARKING	N/A
7.1	Mandatory markings:	N/A
	- mark of origin	N/A
	- model number, type reference .....	N/A
	- rated supply voltage (V) .....	N/A
	- rated supply current (A) .....	N/A
	- rated input power (W) .....	N/A
	- nominal power	N/A
	- indication of connections, wiring diagram	N/A
	- value of $t_c$	N/A
	- eye protection	N/A
	- marking of built-in modules only	N/A
7.2	- location of marking	N/A
7.3	Marking durable and legible	N/A
	Rubbing 15 s water, marking legible	N/A
8	SCREW TERMINALS	N/A

**IEC 60598-2-4\_ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
	Compliance with section 14 of IEC 60598-1		N/A
	SCREWLESS TERMINALS		N/A
	Compliance with section 15 of IEC 60598-1		N/A
	CONNECTORS		N/A
	Compliance with IEC 60838-2-2		N/A

<b>9</b>	<b>PROVISION FOR PROTECTIVE EARTHING</b>	<b>N/A</b>
	External metal parts connected to the earth terminal:	N/A
	- compliance with 7.2.1 in IEC 60598-1	N/A
	Test with a current of 10 A between earthing terminal and each of the accessible metal parts; measured resistance ( $\Omega$ ): < 0,5 $\Omega$ .....	N/A
	Protective earth, symbol	N/A
	Terminal complying with clause 8 in Part 1	N/A
	Locked against loosening and not possible to loosen by hand	N/A
	Not possible to loosen clamping means unintentionally on screwless terminals	N/A
	Earthing via means of fixing	N/A
	Earthing terminal only used for the earthing of the control gear	N/A
	All parts of material minimizing the danger of electrolytic corrosion	N/A
	Made of brass or equivalent material	N/A
	Contact surface bare metal	N/A
	Conductors by tracks on printed circuit boards:	N/A
	- a.c. current of 25 A for 1 min between earthing terminal and accessible metal parts	N/A
	- compliance with clause 7.2.1 in IEC 60598-1	N/A

<b>8 (10)</b>	<b>PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS</b>	<b>N/A</b>
	Protection against accidental contact with live parts in compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)	N/A
- (10.1)	Controlgear protected against accidental contact with live parts	N/A
- (A1)	Current measured according to IEC 60990, figure	N/A

**IEC 60598-2-4\_ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
	4 and clause 7.1: max. 0,7 mA (peak) or 2,0 mA d.c., for $f \geq 1000$ Hz max. 70 mA .....		
- (A2)	Voltage at 50 kΩ (V): max. 34 V (peak) .....		N/A
	Lacquer or enamel not used for protection or insulation		N/A
	Adequate mechanical strength on parts providing protection		N/A
- (10.2)	Capacitors > 0,5 µF: voltage after 1 min (V): < 50 V .....		N/A
8.1 (-)	SELV-equivalent controlgear accessible parts are insulated from live parts by double or reinforced insulation according 8.6 and 13.1 in IEC 60065		N/A
8.2 (-)	Exposed terminals of SELV or SELV-equivalent controlgear are allowed if: - the rated or maximum output voltage does not exceed 25 V r.m.s. - the no-load output voltage does not exceed 30 V r.m.s. or $33\sqrt{2}$ V peak		N/A
	Insulated terminals if rated output voltage >25 V		N/A
	One capacitor Y1 or two capacitors Y2 of the same values used in series between SELV or SELV-equivalent output and primary circuits - Capacitor complying with IEC 60384-14 - Other components bridging the separating transformer complying with EN 60065, clause 14		N/A

11	MOISTURE RESISTANCE AND INSULATION	P
	Protection against moisture and insulation in compliance with Clause 11, IEC 61347-1	P
	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ): $\geq 2$ MΩ .....	P
	Adequate insulation between input and output terminals not bounded together in SELV-equivalent controlgear	N/A
	For double or reinforced insulation the resistance exceeds 4 MΩ	N/A

12	ELECTRIC STRENGTH	P
	Electric strength in compliance with Clause 12 of IEC 61347-1	P
	Immediately after clause 11 electric strength test for 1 min	P
	Working voltage $\leq 42$ V, test voltage 500 V	P

**IEC 60598-2-4\_ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
	Working voltage > 42 V, test voltage (V): 2U + 1000 V .....:		N/A
	Reinforced insulation, test voltage (V): .....:		N/A
	No flashover or breakdown		P
	Windings in separating transformers in SELV-equivalent control gear according to 14.3.2 of EN 60065		N/A

<b>13</b>	<b>FAULT CONDITIONS</b>		<b>P</b>
<b>13.1</b>	In compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)		P
	When operated under fault conditions the LED-module:		-
	- does not emit flames or molten material		P
	- does not produce flammable gases		P
	- protection against accidental contact not impaired		N/A
	Thermally protected controlgear does not exceed the marked temperature value		N/A
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected		N/A
- (14.1)	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)		N/A
	Distances on printed boards provided with coating according to IEC 60664-3		N/A
- (14.2)	Short-circuit or interruption of semiconductor devices	(see appended table)	N/A
- (14.3)	Short-circuit across insulation consisting of lacquer, enamel or textile		N/A
- (14.4)	Short-circuit across electrolytic capacitors		N/A
- (14.5)	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		N/A
	After the tests the insulation resistance with d.c. 500 V ( $M\Omega$ ) are $\geq 1 M\Omega$ .....		N/A
	Temperature declared thermally protected LED-modules fulfil the requirements in Annex C of IEC 61437-1		N/A
<b>13.2</b>	Module withstands overpower condition >15 min.	1,5 times rated wattage of LED module	P

**IEC 60598-2-4\_ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
	Module with automatic protective device or power limiter, test performed 15 min. at limit.		N/A
	During the tests, tissue paper, spread below module, does not ignite		P

<b>15</b>	<b>CONSTRUCTION</b>	<b>P</b>
	Wood, cotton, silk, paper and similar fibrous material not used as insulation	P

<b>16</b>	<b>CREEPAGE DISTANCES AND CLEARANCES</b>	<b>P</b>
	Creepage and distances and clearances in compliance with IEC 60598-1	P
	Class of protection .....: III	—
	Working voltage (V) .....: <25 V r.m.s.	—
	Voltage form .....: Non-sinusoidal	—
	PTI .....: < 600	—
	Rated pulse voltage (kV) .....:	—
	(1) Live parts of different polarity: cr (mm); cl (mm) .....	N/A
	(2) Live parts and accessible parts: cr (mm); cl (mm) .....	N/A
	(3) Parts becoming live: cr (mm); cl (mm) ...:	N/A
	(4) Outer surface of cable: cr (mm); cl (mm) :	N/A
	(5) Live parts of switches: cr (mm); cl (mm) :	N/A
	(6) Live parts and supporting surface: cr (mm); cl (mm) .....	N/A

<b>17 (17)</b>	<b>SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS</b>	<b>P</b>
	Screws, current-carrying parts and connections in compliance with IEC 60598-1 (clause numbers between parentheses refer to IEC 60598-1)	P
(4.11)	Electrical connections:	P
(4.11.1)	Contact pressure	N/A
(4.11.2)	Screws:	N/A
	- self-tapping screws	N/A
	- thread-cutting screws	N/A
	- at least two self-tapping screws	N/A
(4.11.3)	Screw locking:	N/A
	- spring washer	N/A

**IEC 60598-2-4\_ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
	- rivets		N/A
(4.11.4)	Material of current-carrying parts		P
(4.11.5)	No contact to wood		P
(4.12)	Mechanical connections and glands:		N/A
(4.12.1)	Mechanical stress		N/A
	Screws not made of soft metal		N/A
	Screws of insulating material		N/A
	Torque test: part; torque (Nm) .....: .....		N/A
	Torque test: part; torque (Nm) .....: .....		N/A
	Torque test: part; torque (Nm) .....: .....		N/A
(4.12.2)	Screw diameter < 3 mm screwed into metal		N/A
(4.12.3)	Void		—
(4.12.4)	Locked connections		N/A
(4.12.5)	Screwed glands: force (N) .....: .....		N/A

<b>18 (18)</b>	<b>RESISTANCE TO HEAT, FIRE AND TRACKING</b>	<b>P</b>
	Resistance to Heat, Fire and Tracking in compliance with IEC 61347-1 (clause numbers between parentheses refer to IEC 61347-1)	P
(18.1)	Parts of insulating material retaining live parts in position, ball-pressure test:	P
	- part; test temperature (°C) .....: .....	See main report 60598-2-4 part
	- part; test temperature (°C) .....: .....	N/A
(18.2)	Printed boards in accordance with IEC 60249-1, 4.3	See main report 60598-2-4 part
(18.3)	External parts of insulating material preventing electric shock glow-wire test 650 °C	See main report 60598-2-4 part
(18.4)	Parts of insulating material retaining live parts in position, needle-flame test 10 s:	P
	- flame extinguished within 30 s	See main report 60598-2-4 part
	- no flaming drops igniting tissue paper	P
(18.5)	Tracking test	N/A

<b>19</b>	<b>RESISTANCE TO CORROSION</b>	<b>N/A</b>
	Resistance to corrosion in compliance with IEC 61347-1	N/A
	Rust protection:	N/A
	- test according 4.18.1 of IEC 60598-1	N/A

**IEC 60598-2-4\_ATTACHMENT**

Clause	Requirement + Test	Result - Remark	Verdict
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	- adequate varnish on the outer surface		N/A
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A	ANNEX A - TESTS	P
	All tests performed in accordance with the advise given in Annex H of IEC 61347-1, if applicable	P

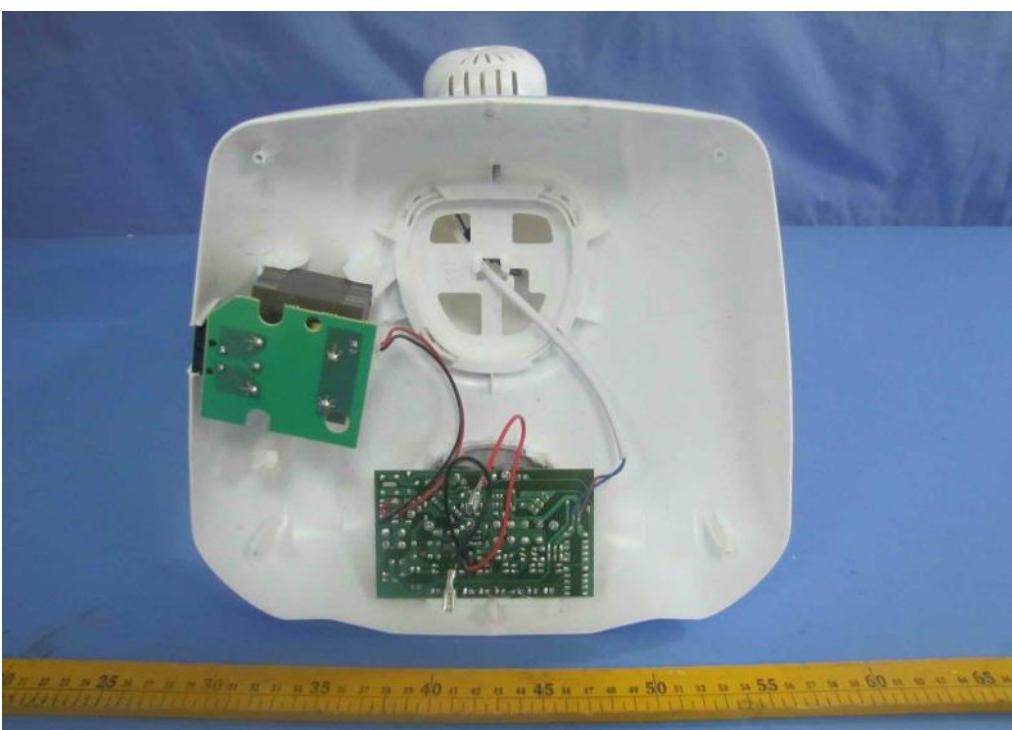
B	ANNEX B - SELV-operated LED modules	P
	ANNEX I of IEC 61347-2-13 - PARTICULAR ADDITIONAL REQUIREMENTS FOR INDEPENDENT SELV D.C. OR A.C. SUPPLIED ELECTRONIC STEP-DOWN CONVERTORS FOR FILAMENT LAMPS	N/A

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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**Attachment 3: Pictures****P**

Overview of model KN-2926



Internal view of model KN-2926

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict



Appliance inlet



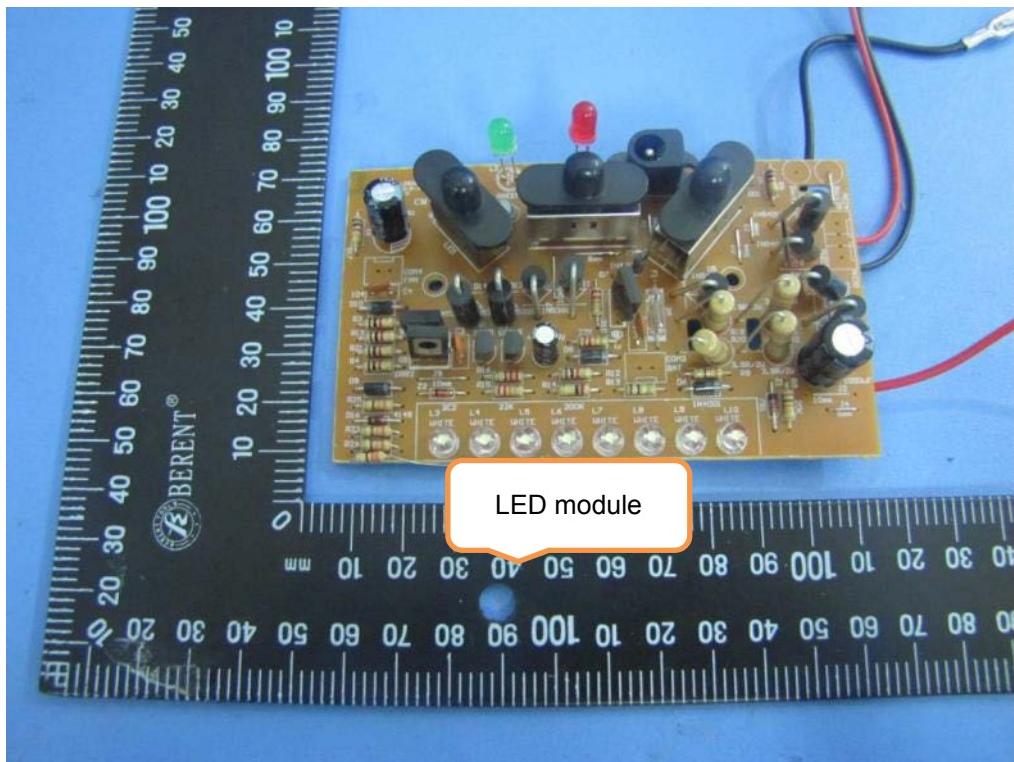
DC inlet on the control panel

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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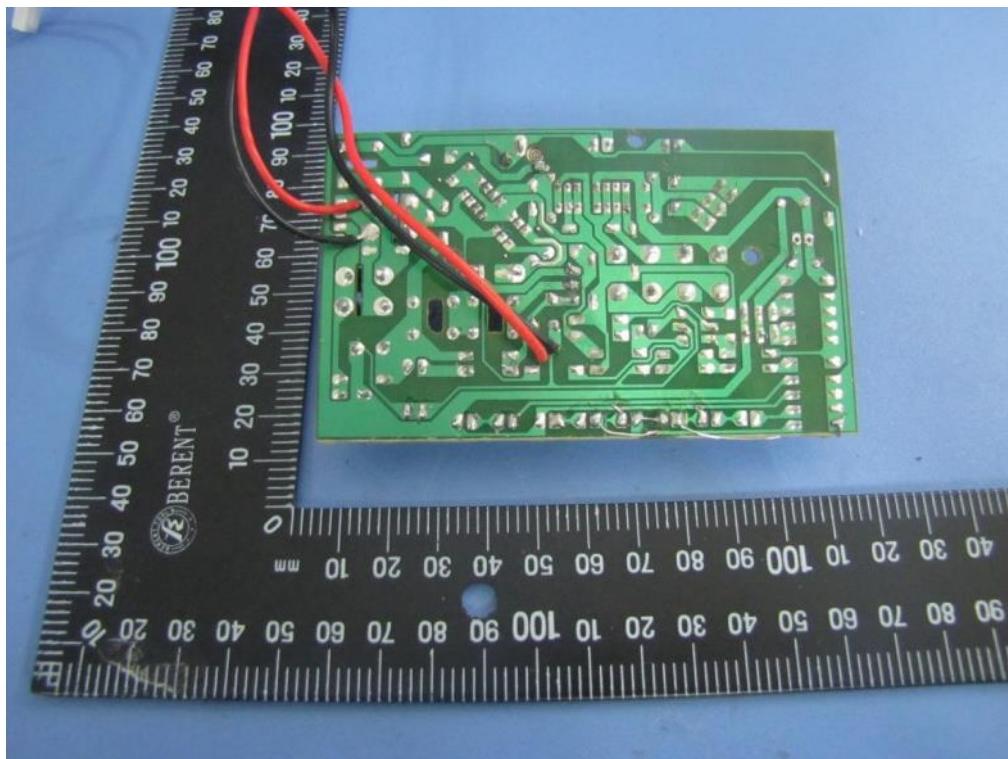
Control panel of model KN-2926



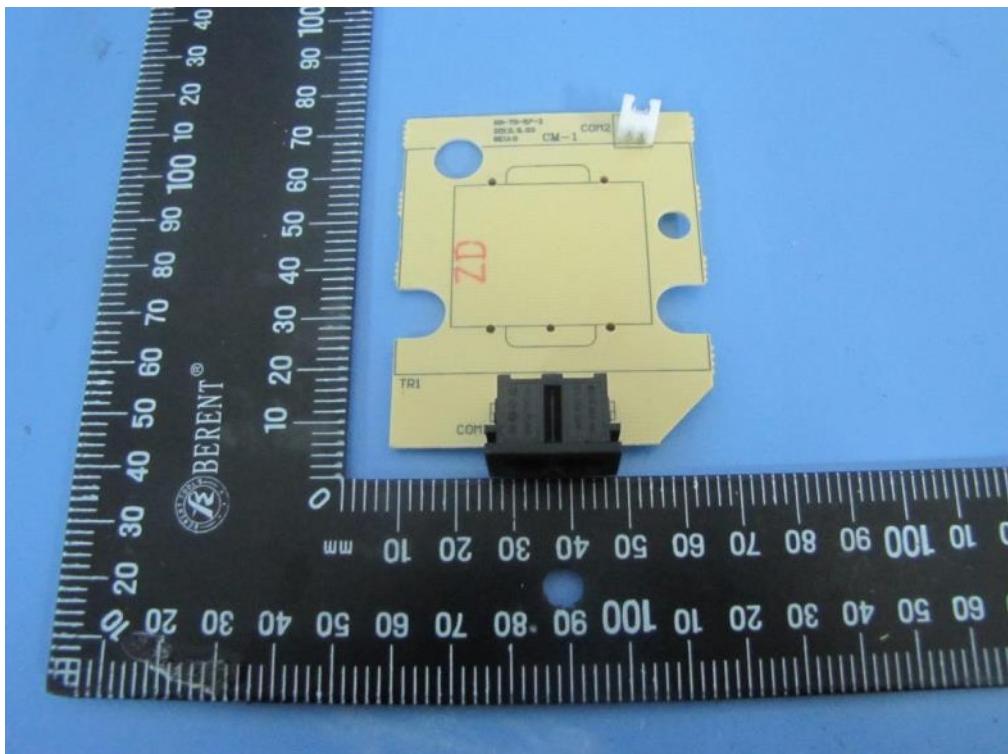
Front control PCB of model KN-2926

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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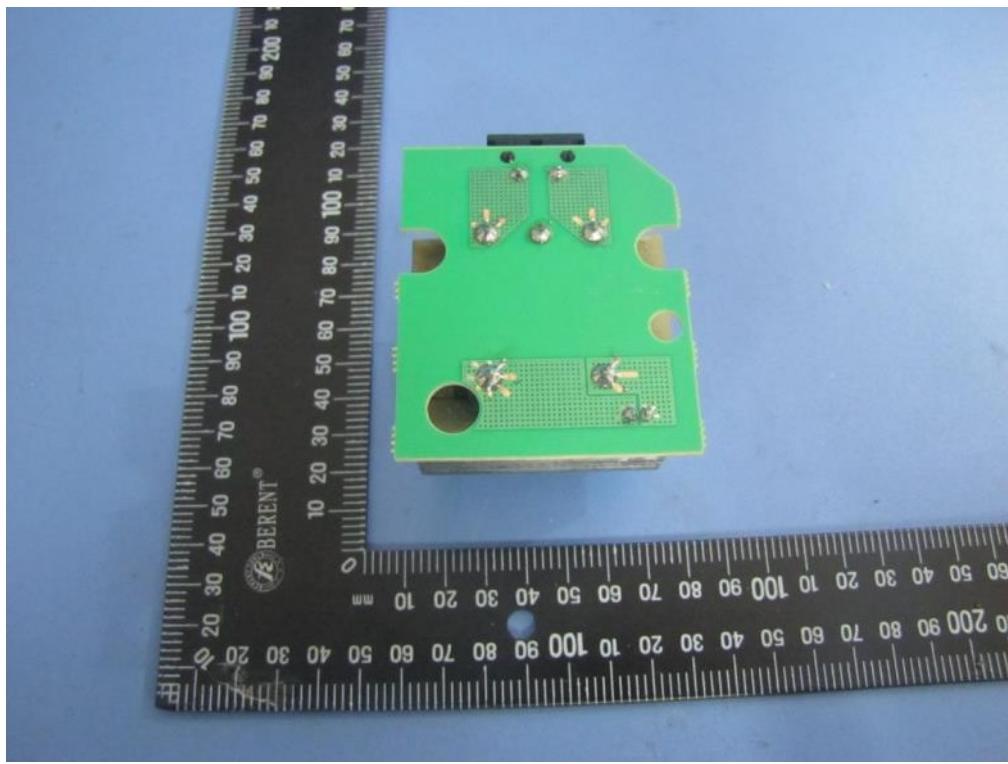
Back control PCB of model KN-2926



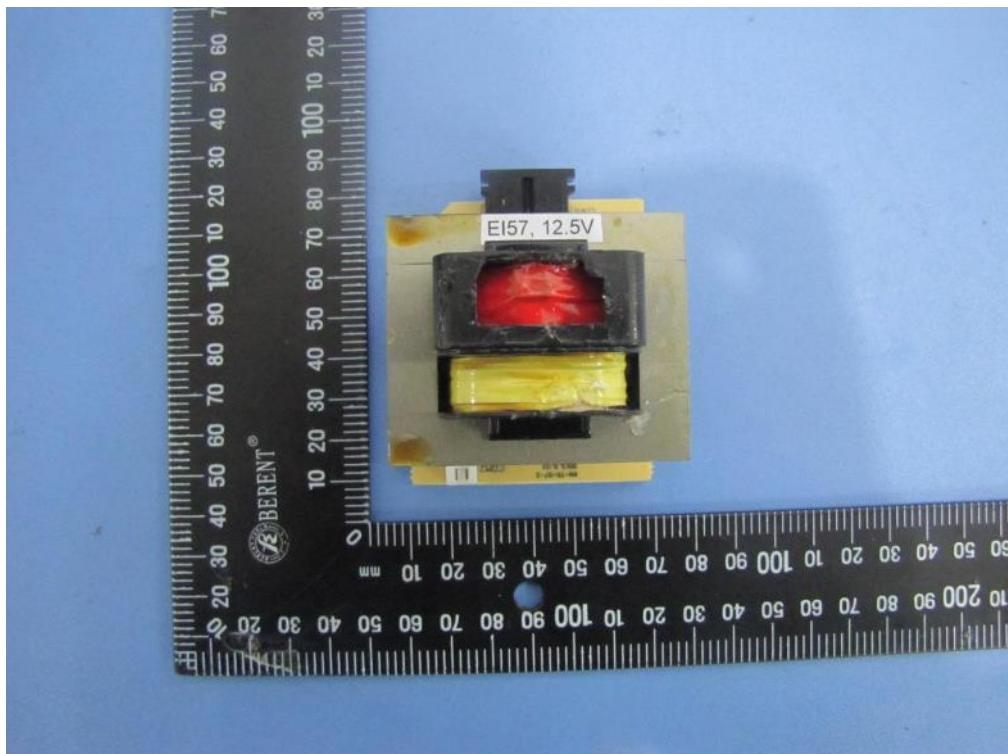
Front power PCB of model KN-2926

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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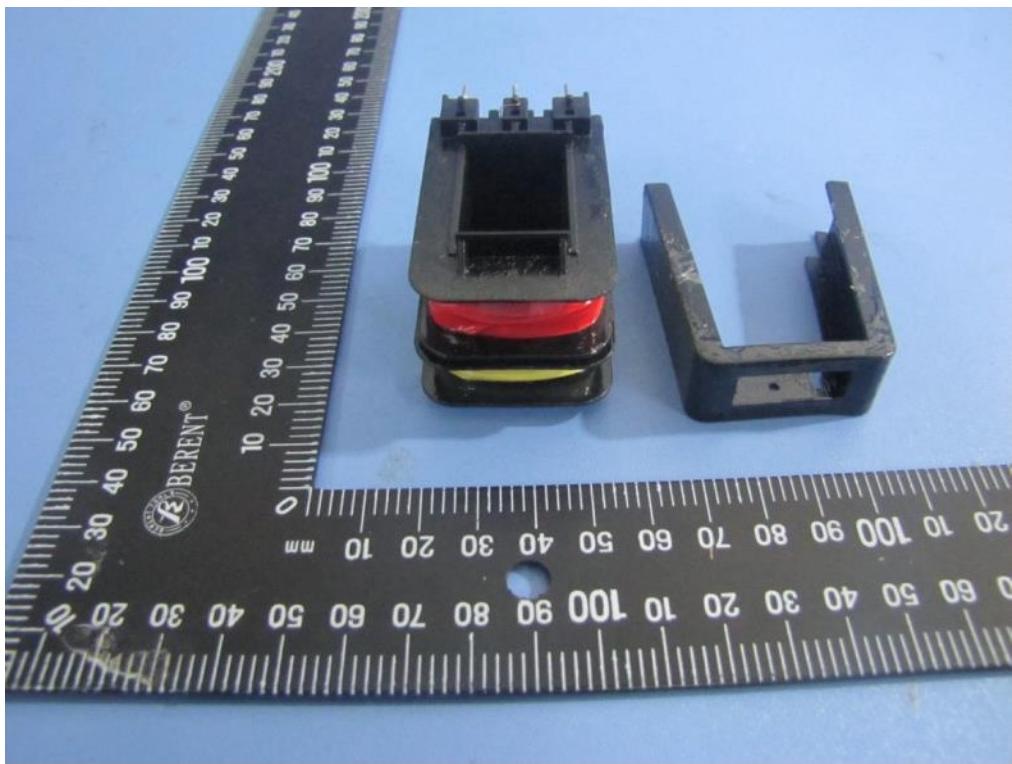
Back power PCB of model KN-2926



Overview of transformer on model KN-2926

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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Overview of transformer on model KN-2926



Internal view of transformer on model KN-2926

<b>IEC 60598-2-4</b>			
Clause	Requirement + Test	Result - Remark	Verdict



Thermal fuse on transformer on model KN-2926



Overview of model KN-2712

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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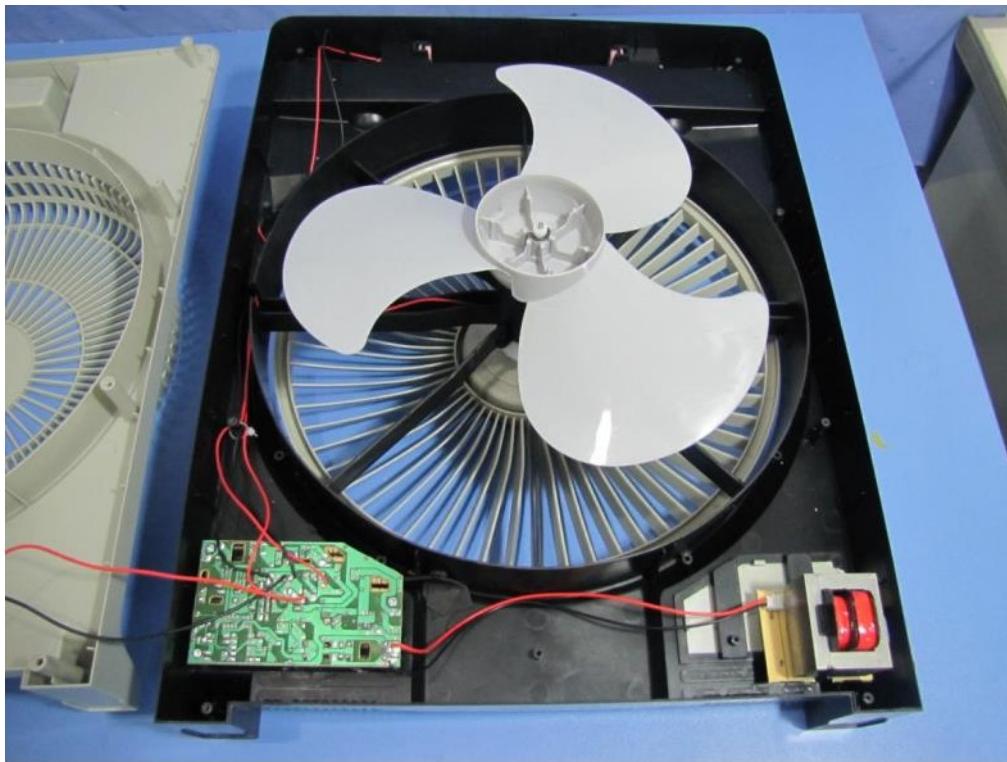
Control panel of model KN-2712



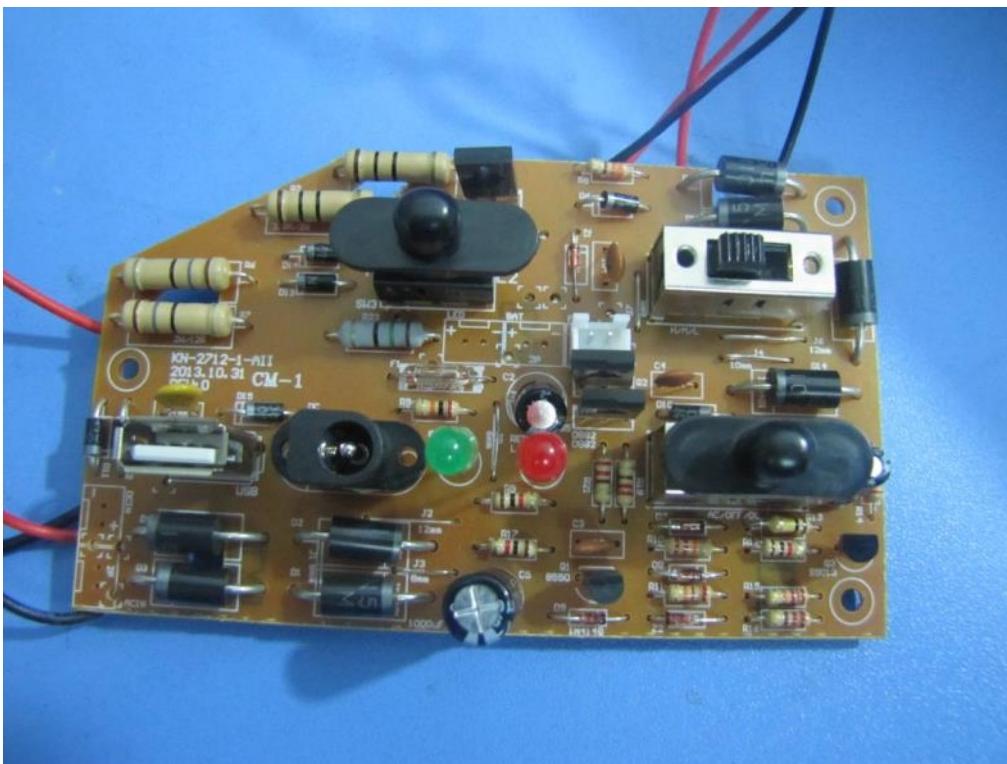
Internal view of model KN-2712

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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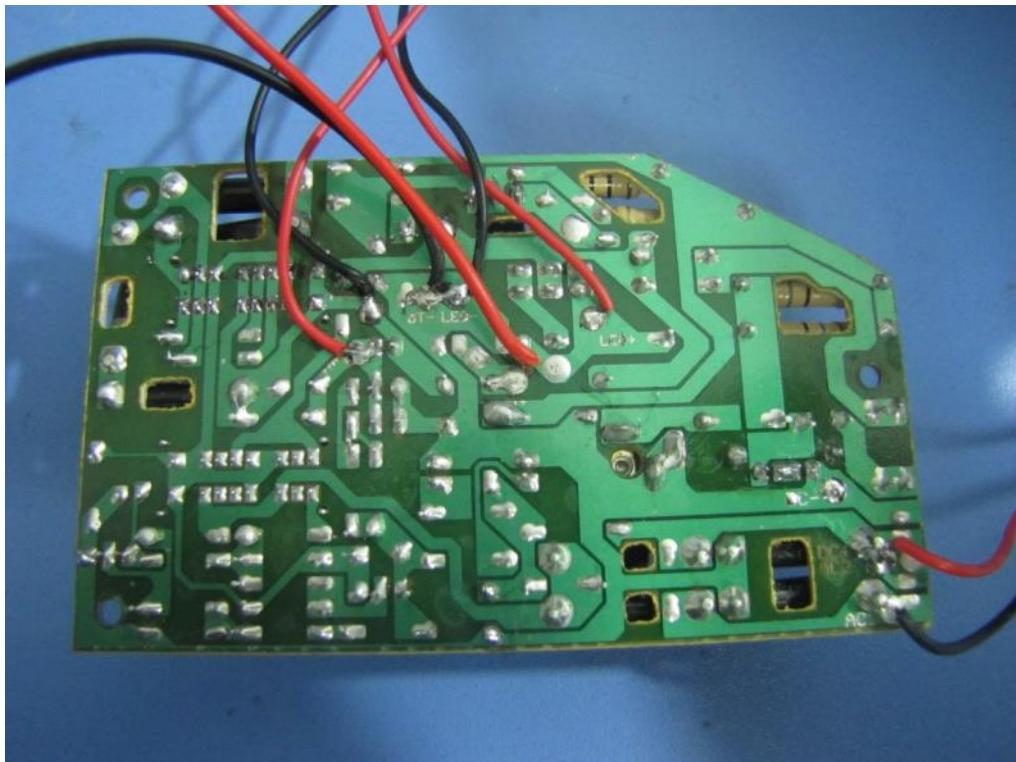


Internal view of model KN-2712

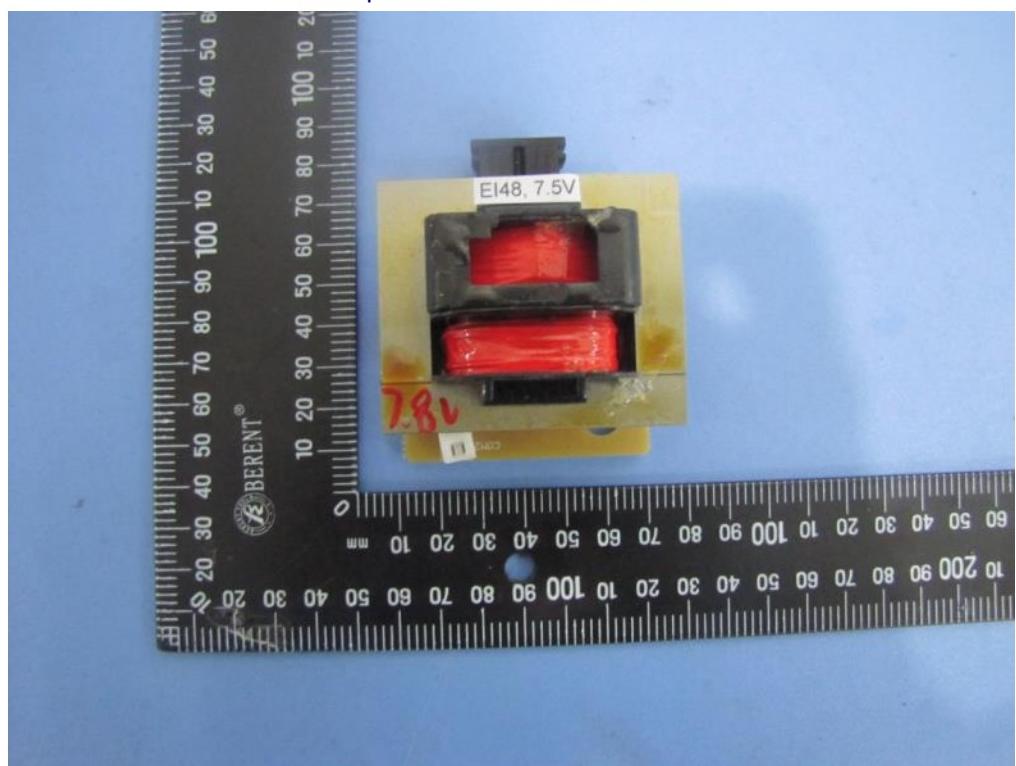


Front power PCB of model KN-2712

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict

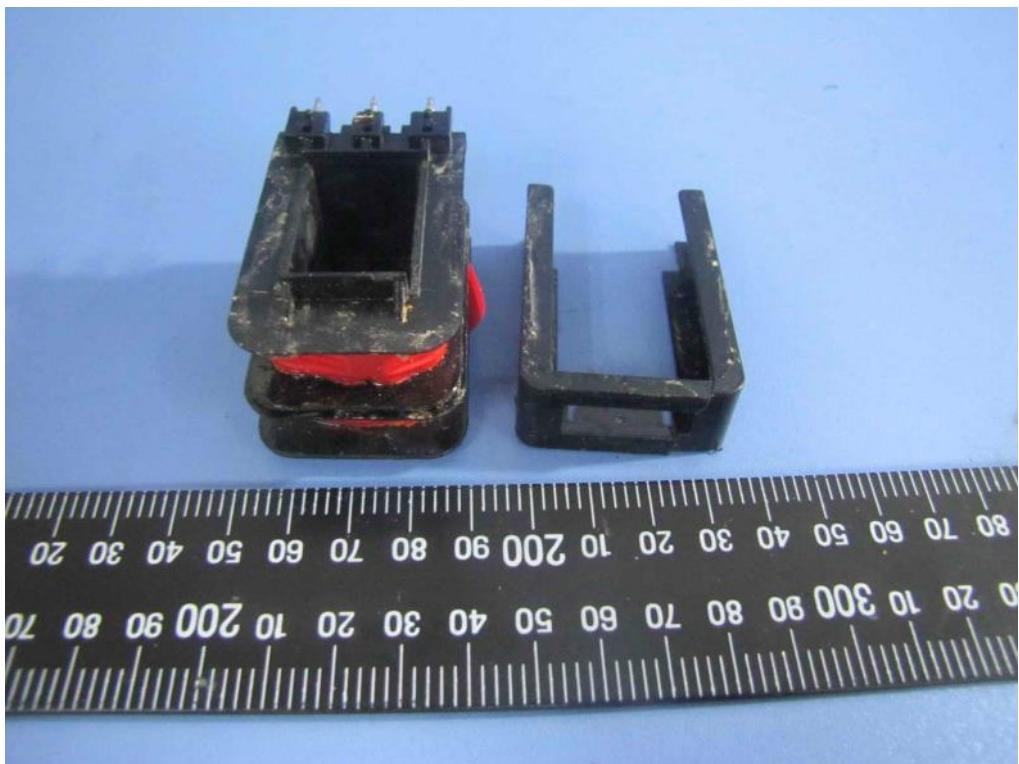


Back power PCB of model KN-2712



Overview of transformer on model KN-2712

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict



Internal view of transformer on model KN-2712



Internal view of transformer (bobbin) on model KN-2712

<b>IEC 60598-2-4</b>			
Clause	Requirement + Test	Result - Remark	Verdict



Thermal fuse on transformer on model KN-2712



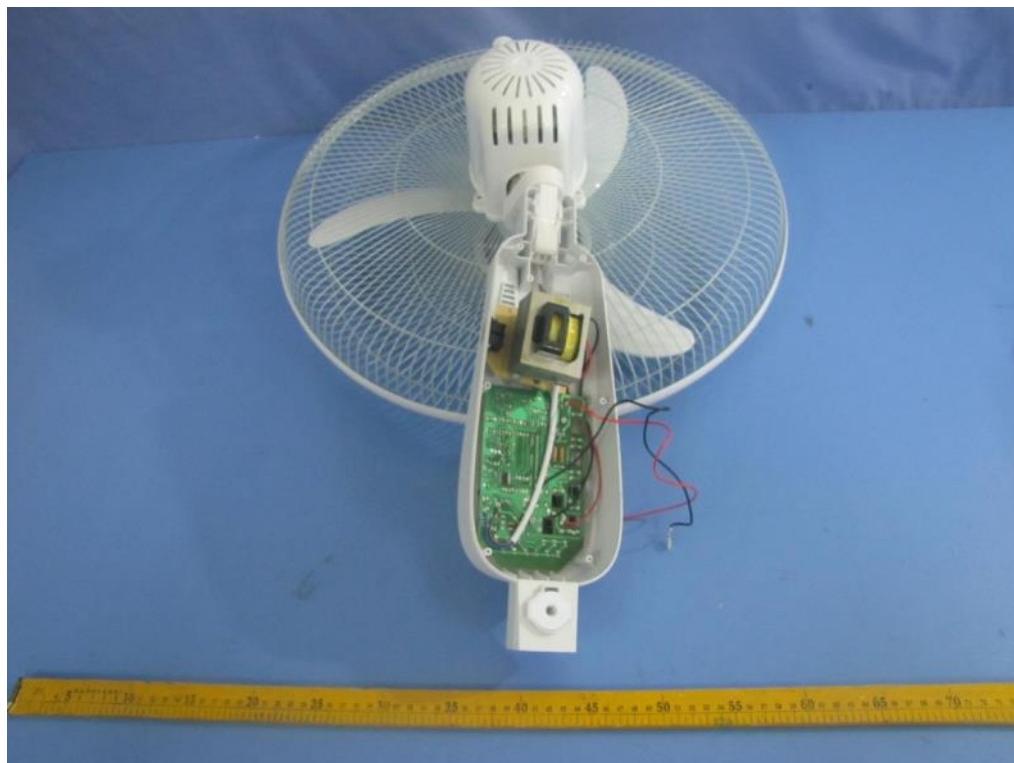
Overview of model KN-2918HR

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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Internal view of model KN-2918HR



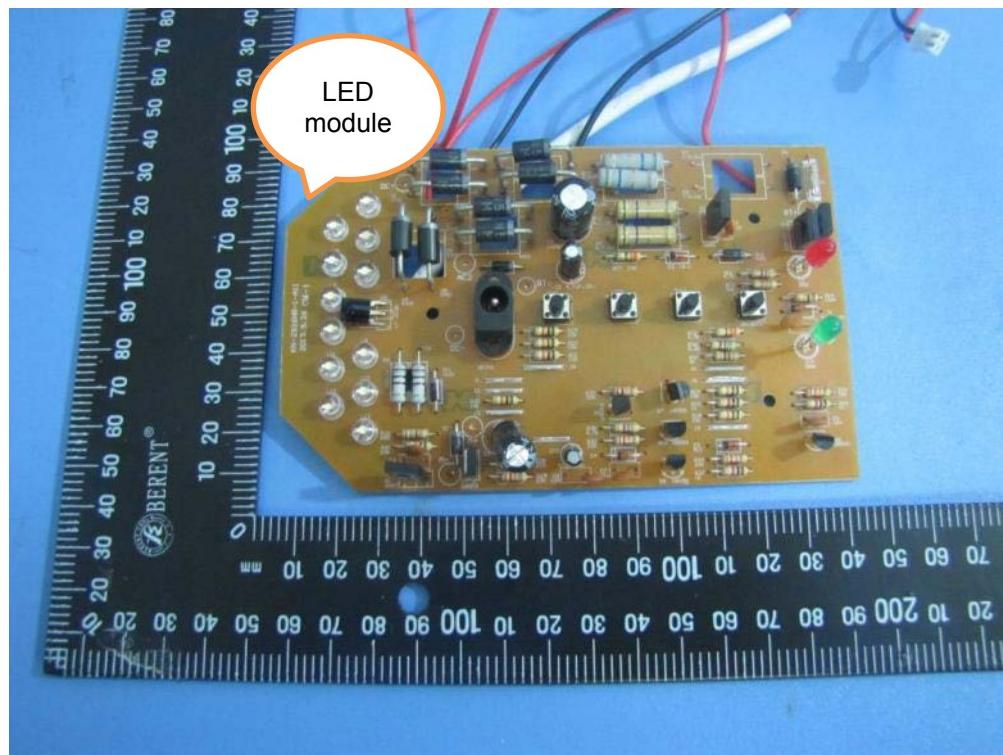
Internal view of model KN-2918HR

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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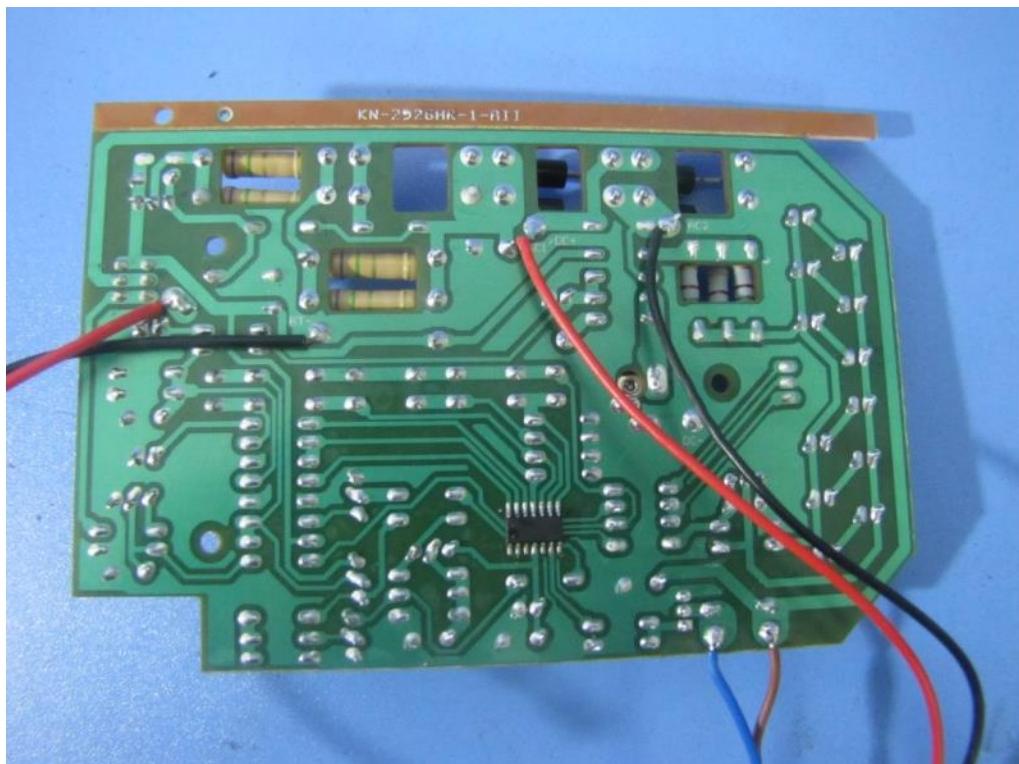
Control panel of model KN-2918HR



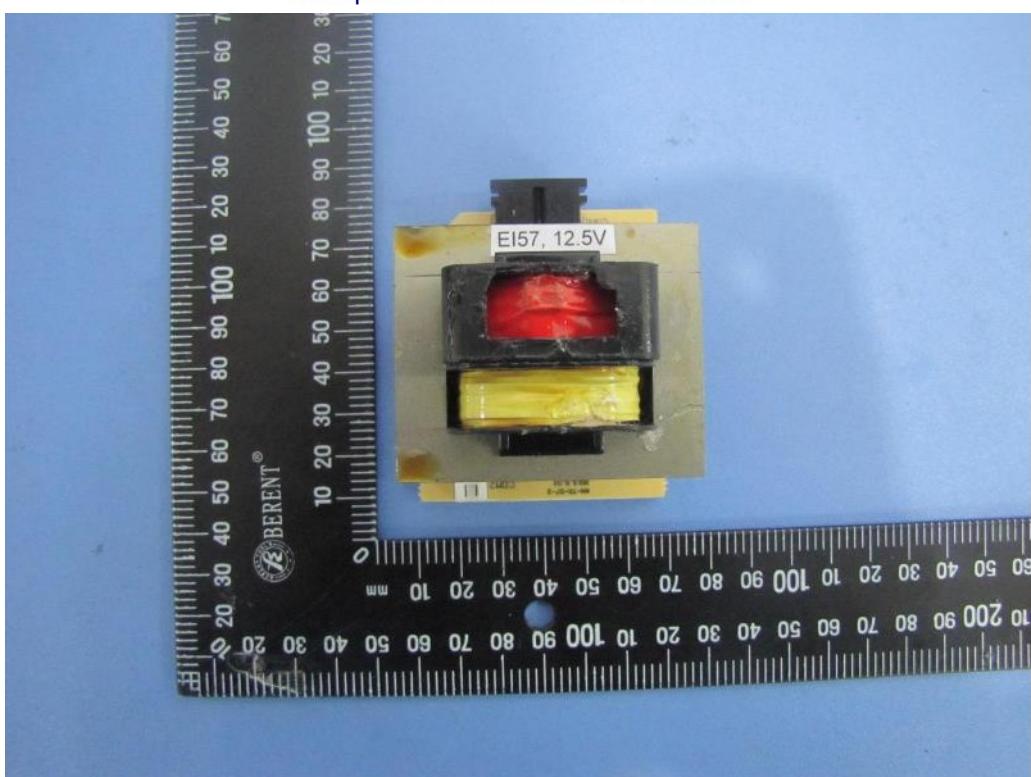
Front power PCB of model KN-2918HR

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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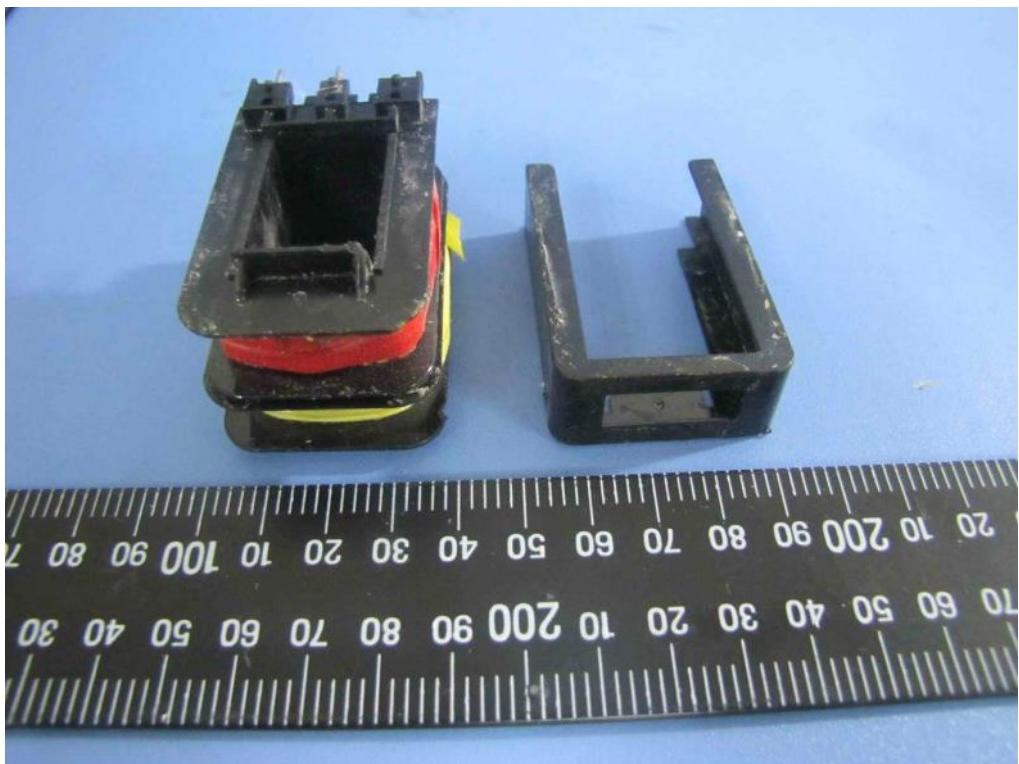


Front power PCB of model KN-2918HR



Overview of transformer on model KN-2918HR

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict



Overview of transformer on model KN-2918HR



Internal view of transformer (bobbin) on model 2918HR

<b>IEC 60598-2-4</b>			
Clause	Requirement + Test	Result - Remark	Verdict

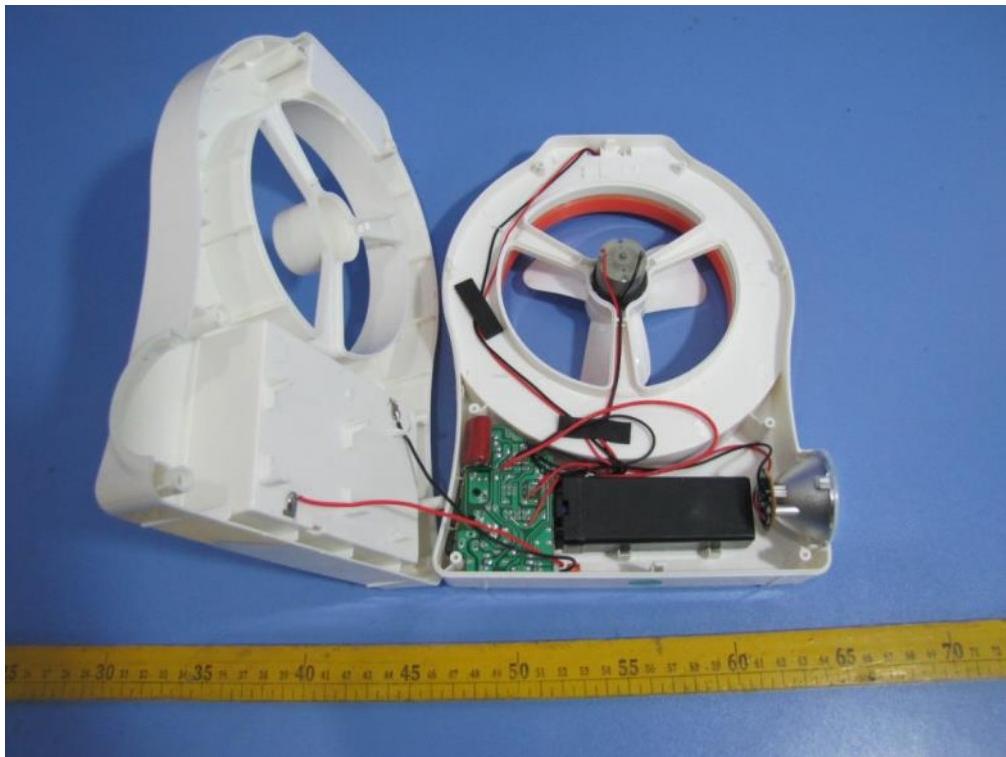


Thermal fuse on transformer on model 2918HR

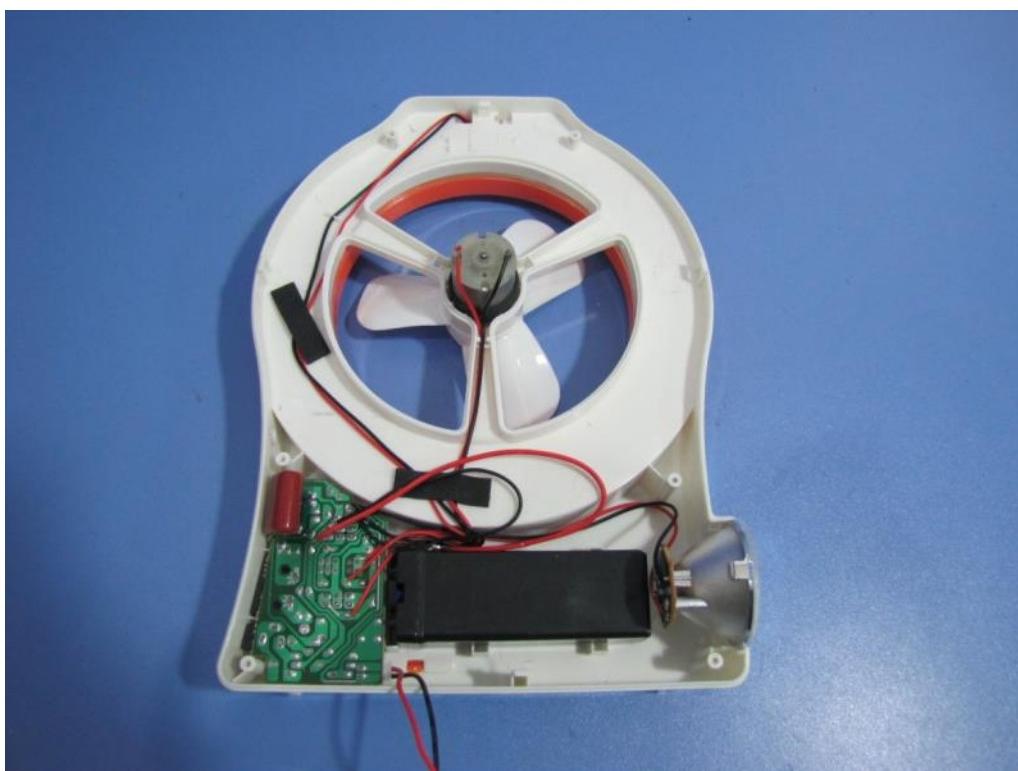


Overview of model KN-2905

<b>IEC 60598-2-4</b>			
Clause	Requirement + Test	Result - Remark	Verdict



Internal view of model KN-2905



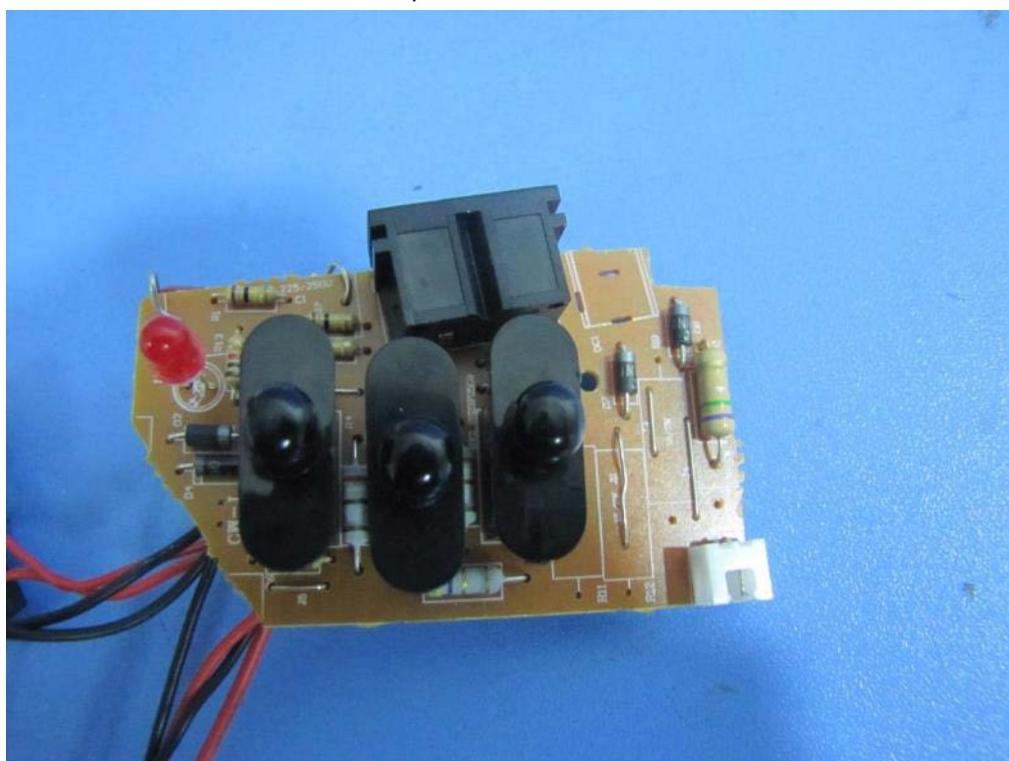
Internal view of model KN-2905

**IEC 60598-2-4**

Clause	Requirement + Test	Result - Remark	Verdict
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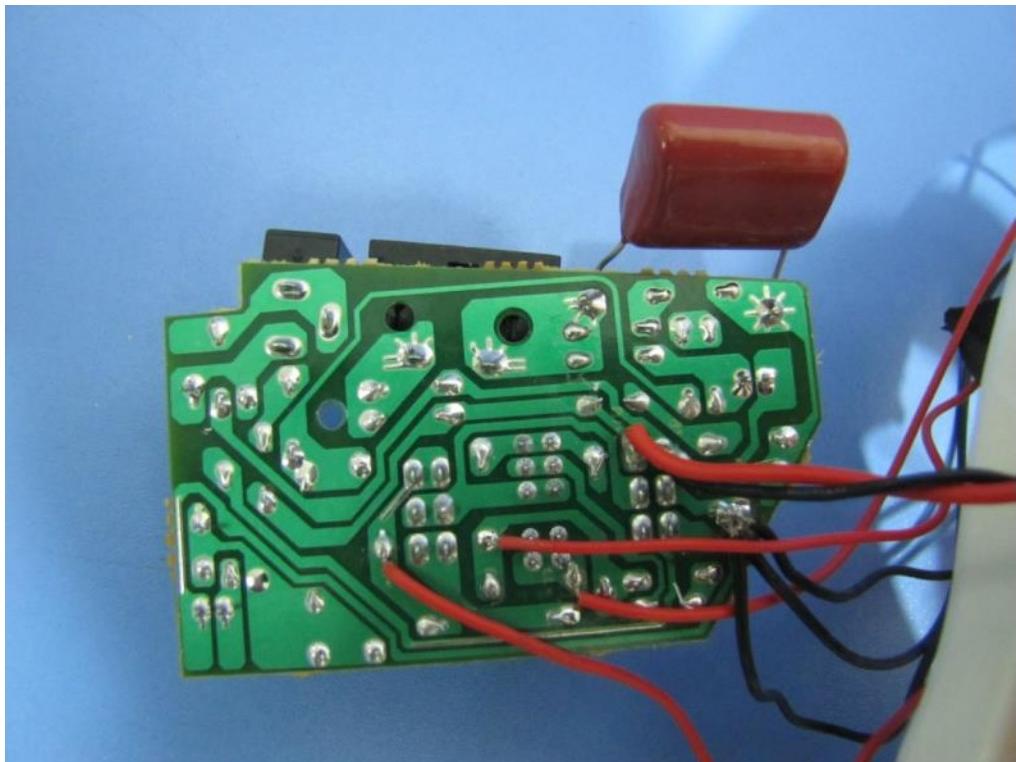


Control panel of model KN-2905

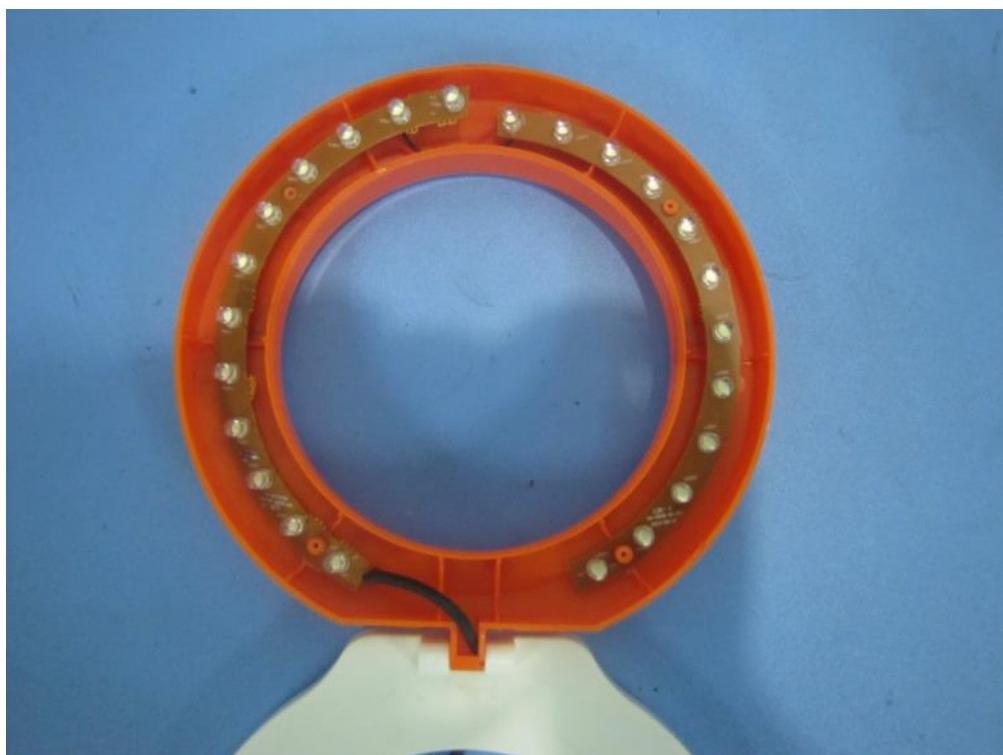


Front Commutator PCB on model KN-2905

<b>IEC 60598-2-4</b>			
Clause	Requirement + Test	Result - Remark	Verdict



Back commutator PCB on model KN-2905

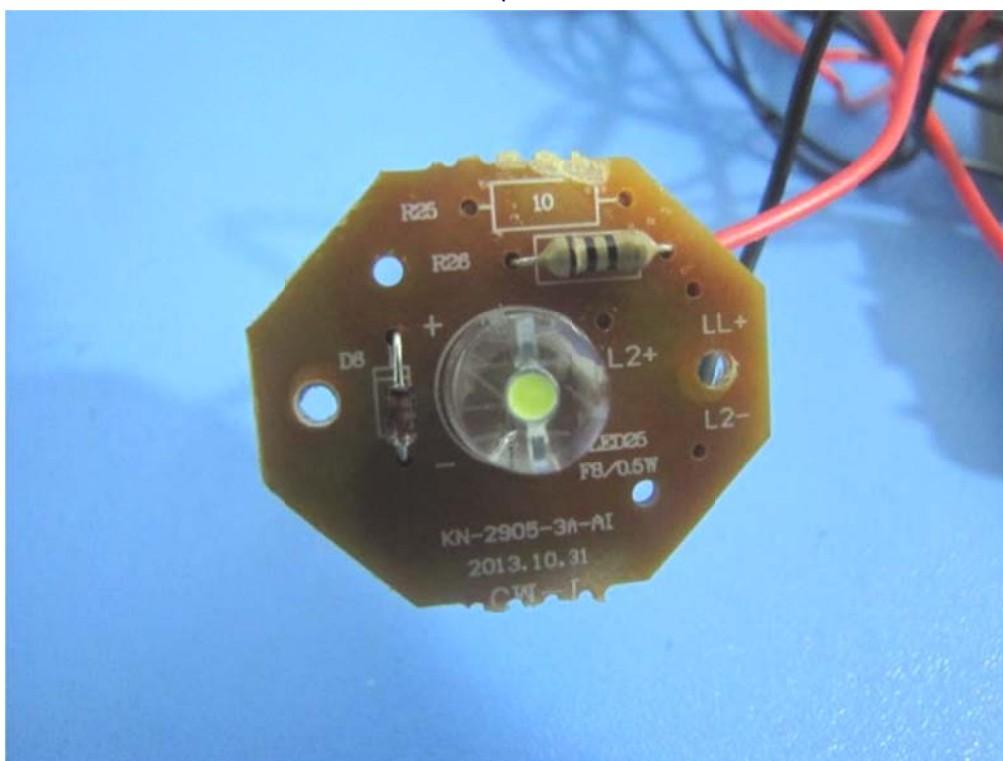


Front overview of LED lamp PCB1 on model KN-2905

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict

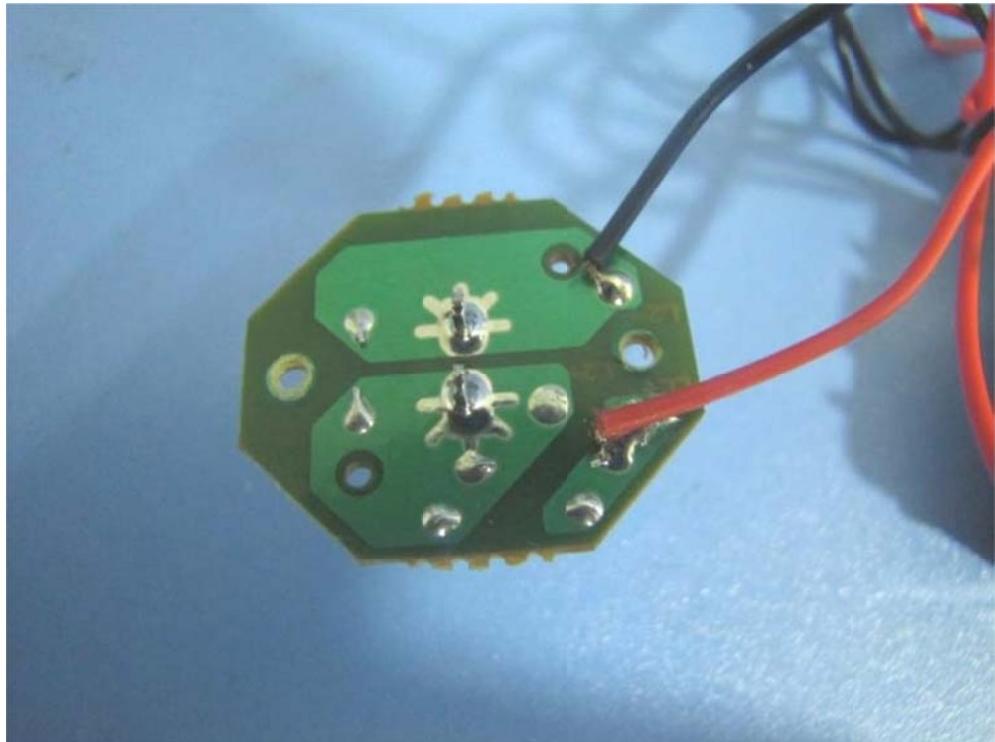


Back overview of LED lamp PCB1 on model KN-2905



Front overview of LED lamp PCB2 on model KN-2905

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict



Back overview of LED lamp PCB2 on model KN-2905



Overview of model KN-2903

<b>IEC 60598-2-4</b>			
Clause	Requirement + Test	Result - Remark	Verdict



Overview of model KN-2912



Overview of model KN-2914

<b>IEC 60598-2-4</b>			
Clause	Requirement + Test	Result - Remark	Verdict



Overview of model KN-2916



Overview of model KN-2924

<b>IEC 60598-2-4</b>			
Clause	Requirement + Test	Result - Remark	Verdict



Overview of model KN-2914H



Overview of model KN-2916H

<b>IEC 60598-2-4</b>			
Clause	Requirement + Test	Result - Remark	Verdict



Overview of model KN-2918H



Overview of model KN-2926H

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict



Overview of model KN-2914HR



Overview of model KN-2916HR

IEC 60598-2-4			
Clause	Requirement + Test	Result - Remark	Verdict



Overview of model KN-2926HR

— End of report —